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The Effect of the Even Start Early Childhood Program Upon Elementary School Student Achievement, Attendance, Grade Progression, Special Education Placement and Disciplinary Referrals

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by

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Dedication

This dissertation is dedicated to my three families:

My personal family including my beloved husband, John, my mother, Nancy, my father, Nicholas, my step-father, Bill, my brother, Paul, and my children, Andy and Katie;

My school family including the faculty, students and community of Southside Heritage Elementary School in Southside ISD;

And my church family including the members of the Covenant Presbyterian Church in San Antonio, Texas

Without these dear people, the fulfillment of this dream would not have been possible.

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The Effect of the Even Start Early Childhood Program Upon Elementary School Student Achievement, Attendance, Grade Progression, Special Education Placement and Disciplinary Referrals

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The purpose of this study was to examine whether or not students who have participated in an Even Start early childhood program had higher academic achievement and attendance rates and lower incidents of grade retention, special education placement and disciplinary referrals during the elementary school years than their non-participating peers. Research has provided mixed results regarding early intervention programs. In this study, Even Start participants were compared to similar English language learners within a central Texas school district. The research questions examined whether Even Start participants demonstrated higher levels of academic achievement, better attendance rates and lower incidents of grade retention, special education placement and referral for serious disciplinary incidents than their non-participating peers. Initially twelve years of data were to be examined, but only four years of measurable data were available, which reduced the scope of this study. Overall, results indicated a positive effect on student achievement and attendance rate. No significant effect was found regarding grade retention, special education placement or discipline referral. Sample size, access to

student records only through grade three and the age of the students studied were limitations to this study.

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CHAPTER ONE

INTRODUCTION

Educational reform appears to have become the new national pastime. Public schools and their perceived need for reform is a topic constantly in the American media. This current wave of criticism began with the report, *A Nation at Risk* (National Commission on Excellence in Education, 1983). *A Nation at Risk* recommended a tougher set of academic standards for high school graduation and for universities, a longer school year/school day, merit pay for effective teachers, and more citizen participation in public schooling.

In response to *A Nation at* Risk, President George H. W. Bush set the national reform agenda with the announcement of America 2000: An Education Strategy (Executive Office of the President, 1990), endorsing six major goals:

> 1) all children in America will start school ready to learn; 2) the high school graduation rate will increase to at least 90 percent; 3) American students will leave grades 4, 8 and 12 having demonstrated competency in challenging subject matter including English, mathematics, science, history, and geography; they will also be prepared for responsible citizenship, further learning, and productive employment in a modern economy; 4) U. S. students will be first in the world in science and mathematics achievement; 5) every adult in America will be literate and will possess the knowledge and skills necessary to compete in a global economy and to exercise the rights and responsibilities of citizenship; and 6) every school in America will be free of drugs and violence and will offer a disciplined environment conducive to learning. (p. 6)

In 1994, the U.S. Congress expanded the list of educational goals to eight under the Goals 2000: Educate America Act, adding goals for a well-educated teaching force and for parental involvement in the education of their children. Goals 2000 was further defined by the No Child Left Behind Act (2002) signed by President George W. Bush in 2002. No Child Left Behind adds accountability to the goals by providing for rewards and sanctions for schools that do or do not meet the standards. Among the mandates under No Child Left Behind are that 95 percent of all students —and in most cases 95 percent of each ethnic group within a school (White, African American, Hispanic, Asian/Pacific Islander, Native American) —will participate in achievement testing and obtain satisfactory standards of achievement in reading and math; and that schools will eliminate the "achievement gap" between prosperous and impoverished students, defined as expecting 100 percent proficiency, by 2014.

Following the requirements of No Child Left Behind (2002), America's schools have become more accountable for the achievement of all students, particularly traditionally underserved populations. Schools must now report the achievement of all students in reading and math beginning at the third grade and ending at the high school graduation level. All sub-populations of students including ethnic groups, students with disabilities and students qualifying for free and reduced lunch must be included. Schools must ensure that no achievement gap exists between student groups and must report the achievement of such sub-populations or risk being labeled as not achieving "adequate yearly progress" (AYP). If schools are labeled as not meeting adequate yearly progress toward eliminating the achievement gap for more than two years consecutively, they may receive sanctions such as

reorganization, placement under independent contractor oversight, requirements allowing students to transfer to better performing schools and ultimately, loss of federal funding.

In such a climate of increased accountability, public schools must find ways to increase the achievement and the graduation rate of lower socioeconomic and ethnically diverse students, or suffer increasing state and federal sanctions. Schools also have the moral imperative to educate all students, regardless of their background or individual need.

Socioeconomic status is a well-known predictor of academic achievement. The wealthier the family, the better the performance (Hunter & Bartee, 2003; Meisels and Liaw,1993). Students from lower socioeconomic families are at greater risk of academic failure and are more likely to drop out of school than their more advantaged peers (Hunter & Bartee, 2003). However, socioeconomic hurdles can be overcome if a child experiences early success in school (Campbell, Ramey, Pungello, Sparling & Miller-Johnson, 2002; Farran, 2000). Early academic problems, retention and special education placement are certain predictors of school failure (Durlak, 1995; Sylva & Evans, 1999). Schools cannot wait for students to fail before they intervene. In order to keep "at risk" children from performing poorly and dropping out of school, schools must find interventions that promote student success early in their schooling.

Another concern for public schools is the growing population of students for whom English is not their first language. In 2002-2003 approximately 10% of the public school population were English language learners (Padolsky, 2004). Approximately 80% were Spanish dominant (Ortiz, Wilkinson, Robertson-Courtney & Kushner, 2006). In southern states, including Texas, from 1990 to 2000 the school age population of Hispanics grew by 322%, contributing substantially to the diversity of public school populations. That

percentage was even higher for the preschool population (Lewis, 2006). According to the National Center for Educational Statistics (2001), the academic performance of Hispanic students continues to lag behind the majority and the high school drop out rate remains high. This is particularly significant for Texas where Hispanic students outnumber any other ethnic group (Ortiz et al., 2006).

Research regarding the achievement of English language learners notes lower achievement on the National Assessment of Educational Progress (Mazzeo, Carlson, Voekl & Lutkus, 2000) and on statewide assessments in reading and math (Albus, Thurlos & Liu, 2002; Ortiz et al., 2006), clearly indicating the need for intervention. Schools must find appropriate interventions that lead to success for diverse populations.

Research regarding appropriate intervention for English language learners is a growing field; however, very few recommendations exist related to early intervention. Among the more noted interventions for the school-age population include dual language or two-way immersion programs for elementary students (Christian, Montone, Lindholm, & Carranza, 1997; Howard, Sugarman, & Christian, 2003; Lindholm-Leary, 2005) and Sheltered English Instruction (Echevarria, Short, & Powers, 2006). These methods recommend building a strong foundation and increasing skills in the student s' first language (Spanish) while adding a second language (English).

Literature regarding the importance of language development in the home (De Houwer, 1995; Patterson, 2002; Pearson, Fernandez, Lewedeg & Oller, 1997) notes that parents are an important factor in language development, particularly for second language learners. Parents should be encouraged to read to their children and to allow language

development through other avenues such as educational television programming (Uchikoshi, 2006).

Although not directly related to any particular ethnic or socioeconomic sub-population, a body of literature exists tying early experience to future cognitive and social growth (Campbell et al., 2002; Jacobsen, 2003; Ramey, Campbell, Burchinal, Skinner, Gardner & Ramey, 2000; Ramey & Ramey, 1998; Schweinhart & Weikart, 1999). These early childhood programs seek to provide holistic educational experiences for young children and parenting education for families. Similarly, some schoolwide models exist that emphasize early intervention as the key to later student success (Slavin, Madden, Karweit, Liverman & Dolan, 1990; Comer, 1988; Levin, 1988).

Summarizing the major findings from early intervention research, Ramey and Ramey, (1998) identify six principles that characterize programs with the strongest positive effects.

1. Timing: Interventions that begin earlier and last longer produce greater effects.
2. Intensity: Programs that are more intensive in terms of hours per day and days per week produce larger effects than programs that are less intensive.
3. Directness: Interventions that directly provide children with daily learning experiences produce more positive and lasting results than those relying on indirect routes such as parent education or health services only.
4. Breadth: Programs providing comprehensive services with multiple routes to enhance development produce stronger effects than narrowly focused programs.
5. Individual Differences: Greater benefits accrue from programs designed to match the child s individual learning style and risk conditions.

6. Environment: Initial effects of interventions will diminish unless supportive changes are made and maintained in the child s family, community and school environments. (p. 109)

These principles lend a framework for investigation of literature related to early intervention. Understanding that children from lower socioeconomic populations and children from diverse ethnic populations, particularly recent immigrants require substantial and early intervention in order to succeed at the same rate as their wealthier, majority peers (President s Advisory Council on Educational Excellence for Hispanic Americans, 1996) this study sought to examine the effectiveness of a particular early intervention program in a central Texas school district which targets low socioeconomic, English language learning children and their families.

The Even Start Family Literacy Program

The Even Start Family Literacy Program is an early intervention, which began as a federally administered program in 1989 and became state-administered in 1992. The No Child Left Behind Act (2002) mandated that funds for Even Start be granted to state agencies and then state agencies distribute funds to a specific program, division or unit. There are currently over 1,000 Even Start programs operating nationwide (Tao, Ricciuti, St. Pierre & Mackin, 2003). Goals of the program include improving the education of children and adults, integrating early childhood and adult education, providing in-home services and center-based activities, facilitating access to community resources, empowering parents as advocates for their children and building effective partnerships between schools and families.

Since its inception in 1989, there have been three national evaluations of the Even Start program with mixed results. The first evaluation (1989-1993) provided more information about program implementation than effectiveness (St. Pierre, Gamse, Alamprese, Rimdzius & Tao, 1998). The second evaluation (1993-1997) was hampered by small sample sizes, attrition and poor quality of test data (Tao, Gamse & Tarr, 1998). The third evaluation (1997-2001) was more extensive, providing for treatment and control groups. Results indicated significant gains for Even Start parents and children on literacy assessments and other measures when compared to control children (St. Pierre, Ricciuti, Tao, Creps, Swartz, Lee, et al., 2003).

In Texas, Seaman (2000) conducted a study of 631 families enrolled in Even Start programs between 1989 and 2000. Findings were limited to parent effects, which were significant. Over all parents increased reading and writing skill and were more likely to read to their children at home.

The Even Start Program in a central Texas independent school district has been in existence for twelve years. Originally under the auspices of a local community service agency, Even Start is now a program administered by the County Texas ISD (a pseudonym for the name of the school district in order to preclude direct identification of the district). Even Start is committed to "helping break the cycle of poverty and illiteracy by improving educational opportunities of low-income families by integrating into a unified family-centered program: early childhood education, adult education, parenting education and parent and child together activities" (Even Start program overview, 2001, p. 1).

Even Start in the County ISD enrolls up to 50 families each year. To qualify a family must have a child 0 to 8 years old and a parent wanting to obtain a GED, to learn English as a

second language, or to learn computer or job skills. Families must also live in the CISD attendance area. Children are served at the Even Start Center or attend any of the elementary schools in the district. Parents attend adult education classes in either a 2-day or 4-day rotation completing 20 or 40 adult education hours per month. Home visit activities are provided once per month by Even Start staff. Weekly parenting sessions during the day are required as are monthly evening sessions.

The literature regarding the effectiveness of the Even Start program is thin and difficult to generalize. Most studies (Seaman, 2000; St. Pierre, Gamse, Alamprese, Rimdzius & Tao, 1998) focused on parent participation rather than student outcomes. Believing that early intervention is the path to improved achievement for at risk youth, this study examined the effect of participation in the Even Start Early Intervention Program for children in the County School District. Even though the Even Start program has been in operation in the County ISD area for twelve years, little data on the effectiveness of the program related to student outcomes exist. The availability of longitudinal data permitted an opportunity for examination of short term and long-term effects.

The purpose of this study was to examine variables that are generally acknowledged by researchers and practitioners as important accountability measures of school effects and are clearly documented in the literature related to early intervention. This study measured specifically student achievement, attendance, grade progression, special education placement and discipline data for Even Start program students compared to non-program students of similar background. The availability of twelve years of student data provided an unusual opportunity to examine post hoc early childhood intervention with non-intrusive methodology. The conceptual framework provided by Ramey and Ramey (1998) structured

the design of this study, serving as criteria for examination of data, which addresses the following research questions:

Research Questions

1. Are there significant differences in academic achievement, during the elementary school years, for participants and non-participants in an Even Start program?
2. Are there significant differences in student retention rates, during the elementary school years, of participants and non-participants in an Even Start program?
3. Are there significant differences in attendance rates, during the elementary school years, of participants and non-participants in an Even Start program?
4. Are there significant differences in special education placement, during the elementary school years, for participants and non-participants in an Even Start program?
5. Are there significant differences in reported disciplinary incidents, during the elementary school years, for participants and non-participants in an Even Start program?

Investigation of these questions is the purpose of this study. Discussion of current literature related to early intervention programs and schoolwide interventions for young children can be found in chapter two. Chapter three discusses the design of this particular study and chapter four discusses the results of calculations related to examination of the variables pertinent to this study. Chapter five discusses the relevance of the results of this study and recommendations to the profession for future research.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Knowing that public schools face increasingly diverse student enrollment, that many of those students require critical intervention in order to succeed, and that early intervention is efficacious, this study examined early intervention programs and schoolwide models related to increasing the likelihood of success for young students considered "at-risk."

Early Intervention Models

Within current research are examples of several model programs designed to intervene early in the lives of young children in poverty. These models are described and discussed regarding their effectiveness related to increasing the achievement of diverse populations of "at-risk" students.

Head Start

Because Head Start is federally funded, yet locally controlled and is the largest nationwide effort to provide early intervention for young children in poverty, it is important to examine the factors related to this program's effectiveness.

The launching of Head Start by the U.S. government in 1965 began a national search of early childhood curricula that would effectively prepare children from low- income families to succeed in school (Goffin, 2000). Head Start began as a summer program for pre-school children of low-income families and today serves lower socioeconomic three and four

year-olds in all 50 states in nearly every sizeable community. Head Start programs are locally administered by community-based non-profit organizations and school systems. Grants are awarded by regional offices of the Department of Health and Human Services; however, American Indian and Migrant programs are administered in Washington, D. C. (U.S. Department of Health & Human Services, 2002). Head Start curricula are not standardized, but locally controlled and often politically influenced, making research of program effectiveness difficult (Farran, 2000).

The literature regarding Head Start s' effectiveness is inconsistent. While it is clear that Head Start children spend more time in persistent poverty than other children from poor families and they experience more behavioral problems in school (Caputo, 1998), it is also true that Head Starters do as well as non-preschoolers in regard to other life success measures such as economic mobility, number of years families spent below official poverty thresholds and number of years receiving food stamps and Temporary Assistance for Needy Families (Caputo, 2003).

In a retrospective follow-up study of young adults who received Head Start services, Oden, Schweinhart, and Weikart (2000) reported that participation in Head Start did not have a significant effect on reducing placements in special education. However, those individuals who were enrolled in Head Start demonstrated increased rates of high school completion accompanied by lower rates of criminal activity.

In 2001, the average cost per child in Head Start was $6,633 and 89% of the children served were either three or four years old. In 2001, over six billion dollars were appropriated to Head Start. Since its inception, Head Start has enrolled over 20 million children and in 2001, over 900,000 children were served (U.S. Department of Health and Human Services:

Administration for Children, Youth and Families, 2002). However, only 35% of the nation s' eligible three and four-year-old children were enrolled (Currie, 2000). Since Head Start is funded by appropriation, eligible children cannot be served once funds are depleted (Currie, 2000).

Recent debate exists over whether Head Start programs should come under state rather than federal control (Senate Plan Rejects State Control of Head Start, 2003). Recent legislation would allow up to eight states to manage Head Start, integrating the program and merging funding with other educational efforts. However, the legislation also requires higher standards for teachers and an expanded emphasis on academics. Some highlights of the plan include: 1) developing new academic standards for learning the alphabet and basic math skills; 2) requiring all Head Start teachers to have at least an associate s' degree by 2009 and show a proven ability to teach; 3) coordinating between Head Start centers and schools to align standards, enabling children to move smoothly from preschool into elementary education; and 4) giving governors authority to approve applications from centers seeking Head Start money for the first time (Washington Update, 2003).

Since many states now provide federally funded programs for four year-olds in public schools, the future of Head Start centers becomes a question for debate. Among the recommendations are transferring Head Start funds to universal pre-kindergarten programs in public schools or shifting the focus of Head start programs to serving children from birth to age three (Barnett & Hustedt, 2003).

In addition to the federally funded implementation of Head Start, many universities and private researchers have initiated and studied early childhood interventions. These interventions will be discussed in the next section of this review.

The High/Scope Perry Preschool Project

Based upon the work of Piaget (1973) and Dewey (1966), the High/Scope Perry Preschool Project (Berrueta-Clement, Schweinhart, Barnett, Epstein & Weikart, 1984; Schweinhart, Barnes & Weikart, 1993) is a child-oriented approach to early education. Children's ideas are valued and adults are trained in helping students make choices in an experiential model of learning. Classes have a consistent daily routine that emphasizes student planning and learning.

> Children make and carry out their plans, then talk about and present their activities. Adults support and extend children's activities toward the next steps in all aspects of their development—initiative, social relations, creative representation, music and movement, language and literacy, logic, mathematics, and science. (Schweinhart & Weikart, 1999, p. 78)

In a longitudinal study that randomly assigned high poverty, African American, mid-western preschoolers to either program or no-program groups and which followed 95 percent of both groups through age 27, Schweinhart, Barnes and Weikart (1993), found that three and four year-olds who attended high/scope programs:

1. were better prepared for school
2. had higher achievement test scores in middle and high school
3. were more likely to graduate from high school

4. as young adults earned more money, were more likely to own a home and a second car, and were less likely to be on welfare
5. were arrested for half as many crimes through adulthood. (p. 76)

When comparing the treatment and non-treatment groups post high school, no significant effects were reported in regard to grade retention or special education placement (Barnett, 1995) although Karoly et al. (1998) reported that program participants spent less time in special education through age 19 when compared to non-program participants. The cost benefit portion of the study calculated that for every dollar spent on the program, taxpayers received an economic return of $7.16.

Results of the Perry Preschool Study suggest that long-term effects on achievement and school success were the result of profound effects on cognitive abilities due to early intervention (Barnett, Young & Schweinhart, 1998). The lack of effects on grade retention may be a result of individual bias regarding retention as an appropriate practice for elementary children.

The Montessori Method

Maria Montessori (1912) developed her method of teaching while serving children with retardation in Italy. She became an advocate for appropriate schooling for all young children regardless of economic or cognitive status. Montessori believed that the first six years of a child s life are the most important for cognitive development including sensitive periods when the child demonstrates profound interest in socializing, movement and language development. Children who do not have the opportunity to pursue these interests

during the sensitive periods suffer irreparable harm" (Ruenzel, 1997, p. 32). In an "authentic" Montessori school, one finds toys, blocks and household utensils designed by Montessori herself.

Children are encouraged to choose their own activities and groupings are multi-aged. Teachers serve as observers or guides. Montessori believed that teachers must first examine their own "evil tendencies, which include the need to dominate or mold the child. A dominating teacher smothers the child's will; no teacher can really initiate learning or any social interaction" (Ruenzel, 1997, p. 33). The exact number of Montessori schools in the world is unknown, but in the United States alone there are approximately 5,000. The Montessori name is not trademarked, so any early childhood center can call itself a Montessori School, making fidelity to the original model difficult to determine.

The wide range of Montessori models and eclectic implementation make researching the effectiveness of the method difficult. Wexley, Guidubaldi and Kehle (1974) studied four groups of children in Akron, Ohio. The four groups included: 25 disadvantaged children from a Montessori program; 25 disadvantaged children from a day care center; 19 disadvantaged control group children without preschool experience; and 19 advantaged children from the Akron area without preschool experience. Different measures including the Wechsler Preschool Scale of Intelligence (Weschler, 1967), the Wide Range Achievement Test (Stone, Jastak & Wilkinson, 1995) and the Cincinnati Autonomy Test Battery (Banta, 1970) were used to assess cognitive development, reading readiness, creativity, impulse control and discrimination skills. Results of the study showed that both the Montessori program children and the other day care children significantly exceeded the performance of the control group on cognitive measures and there were few significant

differences between the disadvantaged children in preschool programs and the advantaged children of the same age. This study appears to confirm that preschool experience of any kind is beneficial to disadvantaged children, but does not necessarily recommend the Montessori method.

The Juniper Gardens Children's Project

Established in 1964 as part of President Johnson's "War on Poverty," the Juniper Gardens Children's Project has become a model of community and university collaboration (Greenwood, 1999). The Juniper Gardens community in partnership with the University of Kansas developed an "environmental laboratory" in which interventions for poverty youth are studied. The work at Juniper Gardens is developmental in that interventions build upon each other along with the age and progress of the children studied.

Among the more widely quoted Juniper Gardens longitudinal studies is the Class Wide Peer Tutoring project (CWPT) (Greenwood, 1991). Longitudinal results of this study noted significant gains in student engagement and greater academic gains in reading, language arts and math in grades 1 through 3. Subsequent reports on the same students indicated continued academic improvement at grade 4 and 7. Juniper students were also less likely to be placed in special education and were less likely to drop out of high school (Greenwood, 1991).

The vision of the Juniper Gardens project includes dedication to improving the lives of children in poverty (Walker, Hall & Greenwood, 1989). As of 1999, over 45,0000

community members in the Juniper Gardens neighborhood have benefited from direct or indirect participation in ongoing research (Greenwood, 1999).

The Abecedarian Project

Informed by Brofenbrenner's ecological system theory (1979), the Abecedarian Project provided a longitudinal, in-depth study of at-risk families and their children. Begun in 1971 in North Carolina, the study examined the long-term effects on four cohorts of families in poverty, 98 percent of whom were African-American. From these families, fifty-seven infants were assigned to the experimental group and fifty-four were assigned to the control group (Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002).

The treatment children received full-day, year-round childcare using a specifically developed, individualized curriculum emphasizing the development of skills in cognition, language, and adaptive behavior. As children aged, the educational content changed, becoming more conceptual and skill-based. Language development and group activities were heavily emphasized without neglecting individual development. "Families in both the treatment and control groups received supportive social services as needed. Although control group children did not receive systematic educational intervention, a number of them attended other child care centers" (Campbell, et al., 2002, p. 45).

At the end of the preschool treatment phase, children were matched based on a 48-month cognitive test score, and then randomly assigned to school-age treatment and control groups. Families treated in the school-age phase were assigned a home-school resource teacher who served as a liaison between the home and the school and provided individual

home study packets based on each child s individual needs for the first three years the child attended public school. Parents and teachers were regularly consulted as to the utility of the home packets. Most responses were positive. The home resource teacher also facilitated referrals for family counseling and other services as necessary. Parents were encouraged to continue education and, in some cases job counseling was provided.

At age 21, 93.7% of original subjects took part in the follow up study. Results showed that individuals assigned to the preschool treatment group had, on average, significantly higher cognitive test scores as young adults than did untreated controls. They earned higher scores on tests of reading and mathematical skills and attained more years of education. They were more likely to attend a four-year college or university, and they were less likely to become teen parents (Campbell, et al., p. 52).

State Preschool Programs

In addition to the model programs previously mentioned, many preschool programs have been implemented by states. According to Jacobsen (2003) thirty-nine states and the District of Columbia have developed or are developing learning standards for preschool aged children. Gilliam and Ziegler (2000) completed a critical meta-analytic review of impact evaluations for thirteen state preschool programs. All programs targeted socially disadvantaged children, provided classroom-based services, were administered and funded at the state level, and served children with and without identified disabilities.

The goal of the majority of these state programs reviewed was to enhance school readiness among participating children. Much like the early intervention models previously mentioned, these programs varied in duration with the majority operating on a nine-month,

half-day schedule (Gilliam & Ziegler, 2000). The number of participants varied greatly by state and the median length of follow-up was third grade. Attrition rates (students who left the study) reportedly fell within the range of approximately 10 to 20% per year. Ten of the thirteen state evaluations utilized some sort of control group, but none of the state evaluations randomly assigned participants to control and treatment groups (Gilliam & Ziegler, 2000).

Of the ten evaluations that included a control group, immediate positive effects regarding academic and social skills were noted; however, beyond first grade no significant gains were reported in any developmental domains. Positive effects were reported regarding grade retention in all of the state evaluations. However, few significant differences were reported in regard to special education placement rates.

Gilliam and Ziegler (2000) question the utility and appropriateness of holding state-funded preschool programs accountable for sustaining program impacts beyond kindergarten or first grade. If the primary goal of state preschool programs is to improve school readiness, then evaluations of preschool education programs should focus on effects at the time of school entry.

The Even Start Family Literacy Program

The Even Start Family Literacy Program was an early intervention, which began as a federally administered program in 1989 and became state-administered in 1992. The No Child Left Behind Act (2002) mandated that funds for Even Start be granted to state agencies, expecting state agencies to distribute funds to a specific program, division or unit. There are currently over 1,000 Even Start programs operating nationwide (Tao, Ricciuti, St. Pierre & Mackin, 2003).

The Even Start program focuses on early childhood education, adult literacy and parenting education. Eligible families must have an adult in need of further education such as completing high school or obtaining a GED, a child or children under eight years old and reside in a Title I elementary school attendance zone (Farran, 2000).

Goals of the Even Start Family Literacy Program include improving the education of children and adults, integrating early childhood education and adult education for parents, providing in-home services and center-based activities, facilitating access to community resources, empowering parents as advocates for their children, building effective partnerships between schools and families, establishing a foundation for later learning and future school success and coordinating efforts with local coalitions (Tao, Ricciuti, St. Pierre & Mackin, 2003).

In 1996-97, at least 90% of the families participating in the Even Start program had incomes at or significantly below the poverty level. Also during that year, 45% of new program participants had only a ninth grade education while 42% had reached grades 10-12 but had not graduated (St. Pierre, Layzer & Barnes, 1998). In 2000-2001, nearly 50% of Even Start parents had less than a ninth grade education and 85% did not have a high school diploma or GED. Similarly, 84% of families reported incomes below the federal poverty line with 39% reporting incomes of less than $9,000. The percentage of parents under the age of 20 has grown since the inception of Even Start. The majority of children being served are between the ages of 3 and 5 (St. Pierre et al., 2003).

The first national evaluation (1989-90 through 1992-93) of the Even Start Program provided more information about program implementation than effectiveness (St. Pierre et al., 1998). The research design included 200 families from five Even Start projects randomly

assigned to attend the program or serve as controls. Data were collected on parent and student performance before initiation of the program and at 9 and 18 months into the program. Consistent with other early childhood intervention studies, students in the Even Start program showed initial gains on the Peabody Picture Vocabulary Test (PPVT) and a preschool readiness measure when compared to control students, but gains were lost after18 months. Although more adults completed their GED in the Even Start Program, there were no significant differences in literacy gains between groups.

Results of the second national evaluation (1993-94 through 1996-97) were also limited. In this evaluation, data were collected from 60 local programs, but there was no control group. Evaluation results were hampered by small sample sizes, attrition and questionable quality of test data (Tao, Gamse, & Tarr, 1998).

The third national evaluation (1997-98 through 2000-01) was much more extensive. Eighteen projects were studied with a total of 463 families assigned to Even Start (309 families) or to the control group (154 families). Pretest, posttest and follow-up data were obtained from all families. Even Start and control families were equivalent at the time of randomization but 10% of the families were lost between randomization and pretest. The 18 projects studied volunteered instead of being randomly selected and 83% of control programs were in urban areas compared with 55% of Even Start programs. The inconsistent matching and selection of programs make generalization of results problematic.

Findings of the study indicated no significant gains for Even Start parents and children on literacy assessments and other measures when compared to control children; however, the groups were non-equivalent. The Even Start children came into the study with lower scores on vocabulary and achievement than their peers, leaving them at a disadvantage

before the study began and made minimal gains upon post-testing. Even Start parents when compared with control parents, made minimal gains at the end of the study (St. Pierre et al., 2003).

Following the change in legislation for Even Start programs under No Child Left Behind (2002) state programs are required to participate in yearly performance monitoring. Tao, Riccuiti, St. Pierre & Mackin (2003) reported that on-site visits are the most commonly used method of monitoring local projects. During on-site visits, the majority of states focus on compliance and a project s progress on implementing family literacy services as measured by local records. Thirty states also indicated that quality and intensity of instructional services are examined, but measures are not standardized. Only eight states reported any data gathering regarding eligibility, retention rates or academic achievement. Lack of consistent measurement of Even Start programs confine results to the individual program studied.

In Texas, Seaman (2000) conducted a study of 631 families who were enrolled in eleven Even Start programs during the 1998-99 and 1999-2000 program years. Since random selection was not possible, Even Start program staff, in cooperation with the researcher, surveyed parents in English or Spanish over a two-day period. Only those parents in attendance on those particular days were included in the study. Academic gains measured by standardized tests of those same parents and children were determined by pre and post-tests.

A second group consisting of 582 families who had exited the same Even Start programs during the 1996-1999 program years was surveyed by telephone. These families were difficult to find and in some cases, whomever could be located was interviewed. No data

were collected regarding student achievement, retention in grade, or special education placement in Seaman s research.

Seaman s findings cannot be generalized beyond the programs included in the study. However, results of the survey included the following qualitative findings:

1. Parents have definite goals when enrolling in an Even Start program. The highest rate of responses included obtaining a GED and learning English.
2. Parents learn about Even Start from a variety of sources. The highest rate of responses included from friends or brochures from the school.
3. Parents in Even Start increase their reading and writing abilities. Parents reported a variety of new reading or writing activities including reading the newspaper and obtaining a library card after participation in Even Start.
4. Parents in Even Start increase their academic abilities. Parents showed significant gains in all areas as measured by the Basic English Skills Test (BEST) and the Test of Adult Basic Education (TABE).
5. Participating in Even start increases the amount of time parents read to their children. Survey data reports at 23% increase in the amount of parents who read every day to their children (Seaman, 2000, pp. 4-8).

School Wide Reform Models

In addition to early intervention preschool models, many public schools are using school-wide reform models, which include preschool programming. Some of the models more

frequently cited in the literature include Success for All (Slavin, Madden, Karweit, Liverman & Dolan, 1990), Accelerated Schools (Levin, 1988), the Tennessee Student/Teacher Achievement Ratio (STAR) (1985) and the School Development Program (Comer, 1988).

Success for All

Success for All (Slavin, Madden, Karweit, Liverman & Dolan, 1990) is a research based schoolwide reform model designed for low income students. The program is a comprehensive package, including materials, training, on-going professional development, and a highly structured teaching plan designed for implementing and sustaining the model in English and in Spanish.

> Schools that elect to adopt the model (by at least an 80% vote of the faculty) implement a schoolwide program for students in grades pre-kindergarten through fifth grade that attempts to ensure that every child will reach the third grade on time with adequate basic skills and will continue to build on those skills throughout the later elementary grades. (Borman & Hewes, 2002, p. 245)

School staff members receive extensive week-long training before implementing the model followed by regular site visits by Success For All staff. Teachers and administration are required to internalize the Success for All philosophy:

> emphasizing prevention and early, intensive intervention designed to increase language development in pre-kindergarten and kindergarten classrooms and to detect and resolve reading problems in first grade, before they become serious. Students in Success for All schools spend most of their day in traditional, grade level classes, but are regrouped across grades for 90 minutes of reading instruction targeted to specific performance

> levels. Each student's reading performance is assessed at eight-week intervals and reading classes are regrouped based on the results. Instead of being placed in special education or retained in a grade, struggling students receive one-on-one intervention to help get them back on track. (Borman & Hewes, 2002, p. 246)

Success for All students are taught cooperative learning methods helping them to develop academic, interpersonal and social skills. Success for All schools also establish a Family Support Team, serving to increase parental participation in school, and to intervene with problems such as poor attendance, discipline problems, or families in crisis.

Finally, Success for All designates a full time Program Facilitator who oversees the daily operation of the program and is the link between the Success for All Foundation and the school (Borman & Hewes, 2002, p. 246). The facilitator also aids the foundation with ongoing research conducted through various Success for All sites (Slavin & Madden, 2000).

In their study of the Success for All program, Borman and Hewes (2002), compared students from the original Success for All schools in Baltimore, Maryland with five matched control schools on the variables of achievement, grade level progression (or retention), and special education placements through middle school. Findings from the study report that Success for All students had higher eighth grade reading and math scale scores on the California Test of Basic Skills (CTBS/4) than did control students. Success for All students held a six-month advantage over control students in reading and a three-month advantage in math. Success for All students spent significantly less time in special education and were significantly more likely to avoid retention in grade.

The Accelerated Schools Model

In the late 1980's Levin and associates (1988) developed the Accelerated Schools Project, embodying the philosophy that school reform requires simultaneous and interactive changes in curricula, instruction, and school organization in order to produce lasting effects" (Miron, St. John & Davidson, 1998, p. 137). Though not specifically an early intervention model, the Accelerated Schools concept can be used at any level of schooling. The focus is on changing the entire system within a school toward a mindset of success for students. This guiding philosophy includes three fundamental principles: unity of purpose, building on strengths, and empowerment coupled with responsibility.

Unity of Purpose refers to all stakeholders within the school pulling together to support the unique values and goals of the school community —including parents, community leaders and businesses. Building on strengths refers to the axiom that "success cannot be built upon weaknesses" (Levin, 1990). School teams must first acknowledge what they do well before identifying areas of need. The concept of empowerment coupled with responsibility defines the belief that classroom teachers and school administrators know their school best and must be given the freedom to make decisions which best serve the needs of their particular school community (Miron, St. John, & Davidson, 1998). Accelerated Schools receive one week of training prior to beginning the model with follow up training as necessary.

Miron, St. John and Davidson (1998) studied two schools in New Orleans in the initial implementation of the Accelerated Schools model. The authors were participant researchers since they were involved as university facilitators and interventionists. Their

goals were to "critically reflect upon their own experience as university facilitators in school restructuring in the urban context and to investigate whether or not the 'situated' character of restructuring affects the successful implementation of the model in two inner city public elementary schools" (p. 142).

Case studies were completed on the schools prior to implementation of the Accelerated Schools model. Faculty and staff attitudes were followed through the implementation process. The researchers also continually reflected upon their own thoughts and attitudes as co-implementers through a university partnership. Findings from the study reflect successful implementation at one school and little to no implementation at the other. The facilitators found that success of the model required moving beyond the actual model and addressing systemic problems. They concluded that the ability to identify and resolve problems is critical to any form of school restructuring. It is necessary to address social issues specific to urban contexts including racism and marginalization of some groups within the schools.

The facilitators also noted that any school restructuring process must have the capacity to adapt quickly to new conditions as they develop. A teacher's strike at the beginning of the school year severely damaged one school's ability to implement the model, but did not affect the other school to the same extent. Finally, the ability to engage in reflective dialogue with all stakeholders was central to facilitation of the model.

Within the Accelerated Schools model, teachers and parents are empowered to participate in the governance of the school. A focus on stakeholder involvement in discussion and planning of programming related to student achievement makes this program relevant to the discussion regarding early intervention. Any restructuring effort of a public

school involving the Accelerated School concept would reveal the importance of early childhood education as an important factor in later student achievement.

The Tennessee Class Size Experiment

A body of research exists confirmed that class size has an effect on student achievement (Glass & Smith, 1979; Glass, Cahen, Smith & Filby, 1982; Hedges & Stock, 1983; Mosteller, Light, & Sachs, 1996; Finn & Achilles, 1999).

> Commissioned by the Tennessee State Legislature in 1985, The Tennessee Class Size Experiment or Project STAR (Student/Teacher Achievement Ratio) was an attempt to discover the affect of reduced class size on student achievement. The total cost of the experiment, including the cost of hiring new personnel, was approximately 12 million dollars. Seventy-nine elementary schools in 42 school districts participated in the project for four years. Teachers and students in kindergarten through grade three were randomly assigned to small classes (13 to 17 students), larger classes (22 to 26 students), or larger classes with a full-time classroom aide. (Nye, Hedges & Konstantopoulos, 2002, p. 203)

The findings of this study suggested that small classes benefit all students, however, the benefits for lower achieving students are inconclusive. Lower achieving students experienced significantly higher achievement in reading, but not in math. The net effect of small classes for very low achieving students in mathematics was positive, but not significant.

The authors also suggest that the findings do not address the possibility that small classes in the early grades might have made identification of low achievers easier, allowing

teachers the opportunity to provide intervention. Small classes, particularly for young children, might allow more individualized instruction for each child, thereby boosting achievement and preventing early school failure.

The Comer School Development Program

The School Development Program (Comer, 1988) focuses on community, parents, church and school as valuable resources for developing students' psycho-emotional, social and intellectual aspects of learning. The School Development Program acknowledges students' total development as being vitally important for success in school and life. Support for this holistic perspective is comprehensive and involves six developmental pathways: social, psychological, language, cognitive, ethical and physical; three governance teams: a school planning and management team, a student and staff support team and a parent team; three guiding principles: collaboration, consensus, and no-fault; and three operations: comprehensive school plan, staff development, and assessment and modification. According to Comer, the attributes of the School Development Program can have a positive impact on student achievement, especially when they are mediated by respect and trust, sensitivity and caring, high expectations, strong achievement motivation, collaborative spirit, order and discipline, effective leadership, positive student interpersonal relationships, and supportive teacher-student relationships (Haynes, 1998).

Although not specifically an intervention for young children, the School Development Program emphasizes the importance of a positive and nurturing school culture, recognizing the various contexts in which children develop and learn, and its developers have characterized implementation as an ongoing process that can take several years to establish

as team members learn new roles in school leadership and participatory decision-making processes (Anson et al., 1991).

Sanacore s'(2000) evaluation of the Comer model focused on the importance of staff development. Sanacore examined the workshop model set up by the Annenberg Foundation to support Comer schools. Methodology for the study included interviews and inventories measuring teacher s'attitudes toward workshop formats and content. Sanacore found that both school practitioners and university faculty benefited substantially from the project. He found increased empowerment among faculty and staff at project schools, providing a solid foundation for responding holistically and successfully to the strengths and needs of the particular community of learners.

In another study of the School Development Program linking implementation to student outcomes, Haynes, Emmons and Woodruff (1998) found a widespread variance in implementation quality. Since the Comer model is more philosophical in nature, implementation may not be as standardized as other reform models. However, in any reform effort, consistency of implementation is expected to increase program effects.

The Importance of Implementation

Not surprisingly, all evaluations of the models described in this paper discuss the level of implementation of the model as directly related to student outcomes. Educators must be fully knowledgeable about a design and agree to implement the design rather than have it forced upon them. Implementation is not a trivial matter, as most of the curriculum models require educators to rethink and actively change many of their practices.

According to a RAND report (McChesney, 1998), measurable success in whole school reform came in districts that "had stable leadership that strongly supported reform, were free of political crisis, had a culture of trust between schools and the central office, provided school-level autonomy in budget and hiring and provided more resources for professional development and planning" (p. 3). According to Wasley, Hampel and Clark (1997), successful schools share a common vision and are willing to investigate new curricula and pedagogy, expecting an increase in rigor. The school community, including parents, must take on a reflective attitude, accepting critical feedback from external sources and acting upon a path of continuous improvement. Dynamic, supportive leadership is another important ingredient in the success of school reform.

Implications of Early Childhood Reform for Educational Leadership

In the context of leadership for early childhood intervention, school leaders must acquaint themselves with child development and early childhood theory. Unless a school leader has teaching experience at the early childhood level, they may not have sufficient knowledge in that area. Preparation programs for the principalship do not typically address early childhood theory or practice. Yet, school leaders must understand the importance of early intervention and its effect on student achievement. School planning teams may neglect early childhood programming unless it is brought to their attention by the leader.

In a study of the effect of transformational leadership on school reform, Leithwood and Jantzi (1999) performed a factor analysis of four conditions in schools consistently interacting with principal leadership. "Purposes and goals" "reflect the leader's ability to rally the staff around a shared or common vision, fostering capacity development and higher levels

of personal commitment to organizational goals. School leadership also has a direct effect on students and staff by setting meaningful achievement goals. Leaders must be able to implement appropriate and extensive "planning processes," blending local school and district needs into a common vision for student success. Leaders must craft and nurture a positive "organizational culture," establishing norms, values and beliefs that shape practice. "Structure and organization" directly affects school culture in the way that school folk communicate with each other and with outside stakeholders. Information gathering and decision-making are whole school processes, modeled by the leader. Strong implementation of school reform, therefore, depends on a collaborative, transformational leader.

Sullivan and Goldenberg (1996) describe five leadership tenets a principal can put to work to improve school reform:

1. Critical selection: choose teacher leaders who support the reform, but eventually grant the most skeptical teachers responsibility and authority.
2. Opinion checking: seek teachers' opinions regarding each step of a reform before going on to another phase.
3. Calculated timing: After asking for opinions, gauge how fast you want to move forward. Teachers might need time before moving ahead.
4. Subtle infiltration: Talk to teachers and make suggestions rather than issuing reform mandates.
5. Results publishing: Hold teachers accountable while allowing mistakes. Create an environment in which teachers can share successes and admit they need help. (p. 14)

Effective early childhood programming requires support and foresight on the part of the leader (Taba et al., 1999). Early childhood teachers are nurturers and may not be able to make needs known. A knowledgeable leader should be able to provide needed resources and provide the bridge to effective parent involvement.

The Importance of Parent Involvement

The importance of parental involvement in early childhood programming is widely documented (Pianta & La Paro, 2003; Pianta & Harbers, (1996); Rimm-Kaufman & Pianta, 1999; Rimm-Kaufman & Pianta, 2001). Parents and the culture in the home are great predictors of school readiness (Korat, 2001). It appears that successful interventions for young children require the education of parents in the importance of their role as first teacher and advocacy for their child s' continued school success.

In relation to the early childhood interventions discussed in this dissertation, it is clear that successful intervention requires ongoing parent involvement and support. In Miron, St. John and Davidson s' (1998) study of the Accelerated School model in New Orleans, the school with the successful implementation of the program had widespread parent support and involvement. The Comer Model depends upon the involvement of the community, family and church in the individual development of the child (Sanacore, 2000). The Success for All model requires a family support team established to a) ensure success for every child; b) empower parents through partnership; and c) integrate health, social and educational services to children and families. Separate training is provided for the family support team in the Success for All staff development component (Slavin & Maddin, 2000, p. 121). The Abecedarian Project findings showed that the younger mothers of the treated pre-school

children made significant progress in their own lives including acquiring more years of education and steady employment (Campbell, Ramey, Pungello, Sparling & Miller-Johnson, 2002).

The Even Start Program focuses on family literacy and requires parents to attend with children. In fact, studies conducted on the Even Start Program focus on parent effects rather than student effects. In short, there is widespread consensus that parent involvement is more than just "best practice," it is imperative.

Applying Ramey and Ramey's Theoretical Model

Ramey and Ramey's (1998) theoretical model is the result of examination of early childhood programming proven successful in preparing high-risk children for initial success in school. Their examination identified six principles that characterize early childhood programs with the strongest positive effects. These principals will be examined with respect to the Even Start Family Literacy Program.

Developmental Timing

Developmental timing speaks to the importance of human development in early childhood programming. Interventions that begin earlier in a child's life are particularly advantageous in preventing disadvantaged children from deviating from normal development patterns. Although the optimal timing for early intervention is open to debate (Ramey, et al., 2000), it is generally believed that the earlier interventions have more lasting effects (Schweinhart, Barnes & Weikart, 1993).

The Even Start Program serves children and their families from birth through age eight. In fact, many families remain in the program even longer if there is a child in the home under age eight (Even Start Program Overview, 2001). Parent educators involved in the program are trained to focus upon child development and include the study of child development in classes designed for Even Start parents.

Program Intensity

Ramey and Ramey s'(1998) examination of program efficacy notes that interventions that provide intensive services in terms of number of hours per day and weeks per year produce greater sustained effects over time. When examining program intensity, the Even Start program provides services to families with daily activities during the school year and during the summer months. Parents are required to log 20 to 40 hours per month of parenting education and other adult education while children are served in the Even Start Center or in the local schools.

Direct Provision of Learning Experiences

This principle in Ramey & Ramey s'model refers to direct delivery of experiences to individual children instead of relying on parent training or improved health care to change children s'performance. The Even Start Program provides specific learning experiences at the center to individual students (ages 0-3). Older children (ages 4-8) are served in the public schools. However, the home component provides directed lessons for parents and children, regardless of age, to participate in together.

Breadth and Flexibility

When examining breadth, Ramey and Ramey (1998) suggest a comprehensive approach including a strong educational program, social services, family support and individualized assistance to produce more positive program effects. Again, Even Start provides daily services to families in the program including referral to social and health services. Parent educators provide services in the home and at the center. Children are followed in the program until they reach age eight, providing assistance to the parent in working with the school to promote early success (Even Start Program Overview, 2001).

Sensitivity

Ramey and Ramey (1998) note that successful early interventions tailor programs to meet the individual social, psychological and health needs of children. When examining sensitivity to the individual child, it is clear that the Even Start Program addresses individual needs of particular families. However, Even Start curricula are not standardized from one site to another, so each program must be evaluated on its own merits.

Environment

Ramey and Ramey s'(1998) last criterion is environment. Understanding that initial effects of interventions will diminish unless supportive changes are made and maintained in the child s'family, community and school environments, the programs presented within this dissertation are either quite clear about requirements for parental involvement and education (Even Start, Success for All, High/Scope, The Abecedarian Project, the Comer model) or not clear at all (the Montessori Method, the Tennessee Class Size Experiment, the Accelerated

Schools Model). Whether or not a model such as Even Start, which clearly meets Ramey and Ramey s' criteria has a positive effect on the future achievement of young children was the subject of this study.

Using Ramey and Ramey s' model as lens through which to examine the programs discussed in this paper, it appears the more powerful intervention programs with the strongest effects are those that satisfy most or all of Ramey and Ramey s' criteria. The purpose of this study is to examine the effects of a particular Even Start program which clearly demonstrates all of Ramey and Ramey s' criteria regarding the variables of students achievement, attendance, placement in special education, retention in grade and serious disciplinary incidents.

CHAPTER THREE

METHODOLOGY

The Even Start Program in the County Texas ISD serves up to 50 families yearly in order to "help break the cycle of poverty and illiteracy by improving educational opportunities of low-income families by integrating, into a unified family-centered program: early childhood education, adult education, parenting education and parent and child together activities" (Even Start Overview, 2001, p. 1).

The Even Start Early Childhood Program has been available in the County Texas Independent School District for twelve years. In the first eight years, the program was managed by a local public service agency. Since the 2001-2002 school year, the County Texas ISD has been the manager and fiscal agent for the program. According to program literature, the mission of the Even Start Program in County ISD is "committed to life-long learning for parents and children through family literacy, early childhood development, and parenting education" (Even Start Overview, 2001, p. 1).

School district permission to conduct this study was obtained by letter in the summer of 2004 and subsequent approval by the Institutional Research Board at the University of Texas at Austin was received in October of 2004.

Longitudinal data from the school district databases included in the Public Education Information Management System (PEIMS) (Texas Education Agency, 2005) and Even Start Program records permitted the identification of student/family participants in the program. The Public Education Information Management System (PEIMS) is a database operated by

the Texas Education Agency in order to monitor and manage data related to public school districts within the state of Texas. Districts report student demographic information, attendance records, disciplinary incidents, special program information and financial records through the PEIMS system. School funding formulas and district academic accountability ratings are determined using information reported through the PEIMS system. Districts are required to submit detailed reports twice annually to the state, once in October and again in June.

The longitudinal data retrieved from district records and Even Start program records supported a post hoc, non-intrusive examination of program effects. This study sought to examine the efficacy of the early childhood intervention called Even Start through examination of these longitudinal data sets. The following research questions guided this examination.

RESEARCH QUESTIONS

1. Are there significant differences in academic achievement, during the elementary school years, for participants and non-participants in an Even Start program?
2. Are there significant differences in student retention rates, during the elementary school years, for participants and non-participants in an Even Start program?
3. Are there significant differences in attendance rates, during the elementary school years, of participants and non-participants in an Even Start program?
4. Are there differences in special education placement, during the elementary schools years, for participants and non-participants in an Even Start program?

5. Are there significant differences in recorded disciplinary incidents, during the elementary school years, for participants and non-participants in an Even Start program?

RESEARCH DESIGN

The original design for this study was to have included twelve years of longitudinal data, however, once data collection began, records of students served in the Even Start Program during the years under the local public service agency were not made available to the school district. Many months were spent trying to facilitate a dialogue between the agency and the school district. After much negotiation, it was determined that the records from the agency no longer existed. At that point a decision was made to continue this study examining program effects on students served from the 2001-2002 school year through the 2004-2005 school year for whom school district data were available.

Longitudinal participant data spanning four years of program existence permitted a quasi-experimental design in which participant and non-participant students and families were tested for differences on the critical variables of school success. Specifically, a nonequivalent control group design (Campbell & Stanley, 1963) was used.

Student and Family Selection

Even Start participants in kindergarten through grade three were identified through a search of Even Start records and located in district databases. Since only a small percentage of the eligible students and families in the district were Even Start participants, (N = 52), there were sufficient numbers of non-participants matriculating through the school district to

permit a control population for comparison to program participants. The original design was to match randomly assigned control students against participant students, however the small sample size of Even Start participants compared to the larger sample size of non-participants was problematic. Random sampling of the control population may have significantly affected measurement of the low incidence variables of special education placement, retention and disciplinary incidents. This researcher chose to use a purposive sample of all non-participant students who met the same criteria as participants in order to permit examination of data on these low incidence variables.

Participants and non-participants in the Even Start Program were examined regarding the dependent variables known to be highly correlated with school successes, i.e. socio-economic status, ethnicity, English language learners and educational attainment of the mother (Borman & Hewes, 2002; Chrispeels & Rivero, 2001; Currie, 2000). All of the Even Start participants in this study were English Language Learners. The control sample consisted of non-Even Start students in the same bilingual classrooms as Even Start participants. Control students were enrolled in the same four schools as the Even Start students and subject to the same school policies and disciplinary philosophy. Specifically, participants and non-participants were matched in district databases on the variables of English language learners, Hispanic heritage, at-risk and economically disadvantaged (free or reduced lunch). Students also received the same assessments administered by the same teachers. The total number of cases equaled 318. In the kindergarten cohort 18 students experienced the Even Start program while 76 did not. In the grade 1 cohort 11 students experienced the Even Start program while 59 did not. In the grade two cohort 12 students experienced the Even Start program while 53 did not. In the grade 3 cohort 11 students experienced the Even Start

program while 78 did not. The total for students who experienced the program was 52. The number of non-participants totaled 266. The number of cases examined by cohort and Even Start participation or non-participation can be found in Table 1.

Table 1 Number of cases by Cohort and Program Participation

Cohort	Even Start Participation	
	Yes	No
Kindergarten	18	76
Grade 1	11	59
Grade 2	12	53
Grade 3	11	78
Total	52	266

Research Variables

The independent variable was Even Start participation or non-participation. Dependent variables were generally acknowledged by researchers and practitioners as important accountability measures of school effects. Specifically, academic achievement, retention, attendance, special education placement and discipline served as dependent variables. The dependent variables coded were:

1. Student achievement as measured by the Texas Primary Reading Inventory (TPRI) in kindergarten, the Developmental Reading Assessment (DRA) in grades 1 and 2 and the Texas Assessment of Knowledge and Skills (TAKS) in grade 3.
2. Retention in grade, as measured by district databases.
3. Attendance as measured by daily attendance from the state PEIMS system.

4. Special education placement as measured by district databases.
5. Discipline referrals for severe offenses as measured by district databases.

Students in both Even Start and control populations had missing data for some of the dependent variables. Table 2 indicates the total number of students investigated by dependent variable. For the variables of grade retention, special education placement and serious disciplinary incidents the full number of Even Start students (N = 52) were examined and the full number of control students (N = 266). However, for the variables of attendance and student achievement the number of student cases varied by the size of the cohort. For example, in the kindergarten cohort, TPRI data were available for 28 students who had experienced the Even Start program and for 135 students who had not experienced the program. For the DRA variable in grade 1, data were available for 197 cases total, 33 in the Even Start program and 164 in the control group. For the DRA variable in grade 2 data were available for 135 cases total, 22 in the Even Start program and 113 in the control group. For the variable of TAKS Reading and math, only 10 students had experienced the program, yet the control students varied at 63 in reading and 65 in math. Results of these calculations are discussed in Chapter Four.

Table 2 Data Sets by Dependent Variable

Dependent Variable	Participated in Even Start		Total Cases Investigated
	Yes	No	
TPRI Kindergarten	28	135	163
DRA Grade 1	33	164	197
DRA Grade 2	22	113	135
TAKS Reading (gr.3)	10	63	73
TAKS Math (gr. 3)	10	65	75
Ever Retained in grade	52	266	318
Absences Kinder	49	227	276
Absences gr. 1	32	161	193
Absences gr. 2	22	118	140
Absences gr. 3	10	74	84
Special Education Placement	52	266	318
Disciplinary Incidents	52	266	318

Data associated with the research questions were collected from school district records and databases in the summer of 2005. Specifically, in examining the variable of student achievement, the kindergarten cohort data from the Texas Primary Reading Inventory (TPRI) was coded 1 for "developed" (a positive outcome) and 0 for "not developed" (a negative outcome). In grades 1 and 2 the measure was the Developmental Reading Assessment (Beaver, 2001). Cohort cases were originally coded 1 for "early emergent," 2 for "emergent," 3 for "transitional" and 4 for "self-extending." However, small sample sizes among cohorts hampered statistical analysis. Cases were then recoded as 0 for "early emergent or emergent" (a negative outcome) or 1 for "transitional" or "self-extending" (a positive outcome). At grade 3, scale scores from the Texas State Assessment (TAKS) were

entered for reading and math. Information for these variables came from binders found in the district office or, in the case of state assessment data, from the district data person.

For the variable of retention in grade, students were coded as 1 for "ever retained in grade" or 0 for "never retained." For the variable of attendance, the number of absences was entered per year of attendance in the district. Following preliminary calculations, an extra variable for longitudinal absence data from kindergarten through grade 3 was investigated. Total number of absences was recorded for each child from kindergarten through grade 3. This information was obtained from district databases.

For the variable of special education placement, students were coded as 1 for "ever placed in special education" or 0 for "never placed in special education." Data were retrieved from district databases. Data regarding handicapping condition or instructional setting were not investigated due to extremely small sample size.

Data regarding disciplinary incidents were retrieved from district databases. Students were coded as 1 for "ever having a serious recorded disciplinary incident" or 0 for "never having a serious recorded disciplinary incident."

Coding of the independent variable of program participation (1 = program; 0 = no program) was accomplished. Cohorts of total participant and non-participants were formed. Additional sub-cohorts by specific years of participation were formed (i.e. kindergarten, grade 1, grade 2, grade 3). Some data discrepancies existed between cohorts. For example, students who had been retained left their cohort and joined a cohort of younger peers. Students who were missing more than one year of attendance or achievement data were dropped from this study. Students were not identified by individual name, but coded to allow individual data sets without personal identifiers.

Data Analysis

The availability of data to form experimental and control groups provided samples for direct comparison of the variables utilizing analysis of variance (ANOVA). All statistical calculations were accomplished through the SPSS software program. In order to strengthen the reliability of ANOVA calculations, each dependent variable was investigated further with a Pearson Chi Square, also through the use of SPSS. Disparate sample sizes and the possibility that significance was hampered by sampling errors required examination of the variables through use of an Independent Samples T Test.

Some data problems were discovered. Assessment data for grades 1 and 2 were reported to the district in two different formats. Some campuses reported nominal data, (i.e. emergent, early emergent, transitional, self-extending) while others reported numerical data (16, 17, 3, etc.). After investigating program literature regarding the Developmental Reading Assessment (Beaver, 2001), it was possible to crosswalk nominal data to numeric scores. Table 3 describes DRA numeric data related to nominal categories.

Table 3 DRA Numerical Data related to Nominal Stages

Stage	DRA Numeric
Early Emergent	1 to 2
Emergent	3 to 8
Transitional	10 to 28
Self-Extending	30 to 44

When investigating discipline data it was also clear that data were reported differently by campus. For example, one campus reported bus discipline cases while others did not. For

the purpose of this study, only discipline incidents requiring a child s removal from the classroom were included.

Data Displays

Data for each calculation are displayed in tables generated by the SPSS program. Specifically, tables are included for the One Way Analysis of Variance, Chi Squares for the dependent variables of student achievement, attendance, special education placement, retention in grade and disciplinary incidence. Independent sample t tests measured variation between means in disparate sample sizes. These tables can be found in Chapter Four, Results.

CHAPTER FOUR

RESULTS

The purpose of this study was to investigate whether or not participation in the Even Start Early Childhood Program had a significant effect upon student achievement, attendance, retention in grade, special education placement and incidence of disciplinary action. The reduction in the amount of available data not only changed the scope of the study, but also some of the data studied to measure program effects. Instead of twelve years of longitudinal data, only four years of data were available of cohorts of students enrolled in kindergarten through grade three. Data were collected in the summer of 2005. Achievement data were limited due to the age of the children in the study. Data sets are discussed along with each dependent variable.

The independent variable, Even Start participation, was coded as program and no-program participation (*1 = program; 0 = no program*). The reduction in scope of this study from twelve to four years greatly reduced the sample size. Total number of cases in this study including program and no program students was 381. Program participants were reduced to N = 52. See Table 2 in chapter 3 for number of cases examined per variable.

The dependent variables in this study were:

1. Student achievement, as measured by the Texas state assessment (Texas Assessment of Knowledge and Skills) administered in grade 3 only, the Developmental Reading Assessment (DRA) administered in grades 1 and 2 and the Texas Primary Reading Inventory (TPRI) administered in kindergarten. Once data collection began, only third grade state assessment data were available. The Texas Assessment of Academic Skills (TAAS) no longer exists for elementary administration. Only the more rigorous Texas

Assessment of Knowledge and Skills (TAKS) is used to measure achievement. Initially TAAS and TAKS data should have been available if student data through grade 8 had been provided. In Grades 1 and 2 only data available from the Developmental Reading Assessment (DRA) were available. Originally this researcher was told that Texas Primary Reading Inventory data would be available for kindergarten and grade 1, but an extensive search of individual student records yielded TPRI scores in kindergarten only. Originally, results from The Iowa Test of Basic Skills, a nationally normed achievement test, were to be used to supplement state assessment data; however, data from the Iowa test were not available for students in the studied grade levels.

2. Grade progression, as measured by student s 'age at entry and exit at each grade level
3. Attendance as measured by raw number of absences from the state (Public Education Information Management System (PEIMS).
4. Special education placement as measured by district databases.
5. Discipline referrals for offenses requiring removal from the classroom as measured by district databases.

Program samples were small in size compared to control samples for each dependent variable, which may have affected results. Data sets for attendance, special education placement and serious disciplinary incidents came from district databases and were reported to the state of Texas through the Public Education Information Management System (PEIMS)

Cohorts of total participants and non-participants were formed from students enrolled in bilingual programs in the district. All children served in the Even Start program were second language learners. The students in the program sample were all enrolled in bilingual

programs at four different schools within the County Texas ISD. In order to provide a control sample of students with similar characteristics to the Even Start population, bilingual students enrolled in the same four schools who had not participated in Even Start were examined with the same dependent variables. All of the students were second language learners, had the same ethnicity (Hispanic), were economically disadvantaged and were coded "at risk" (of not graduating from high school) in state databases.

Additional sub-cohorts by specific years of participation in kindergarten through grade three were formed. Some data discrepancies existed between cohorts. For example, some students had missing data possibly due to withdrawal from and then re-entry to the school district. Students who were retained in a grade left a cohort of their same age peers and joined a cohort of younger peers. Similarly, students who were identified as needing special education services may or may not have taken state or district assessments. Matched pairs of students were not possible due to small sample size. Prior to in depth investigation of the research questions, a one-way Analysis of Variance (Table 4) was conducted to measure initial significance of program effects. From the results listed in Table 4 initial significance was discovered in the variables of TPRI score in kindergarten and absences in grade 1.

Table 4 - One Way Analysis of Variance Dependent Variables by Program Participation

		Sum of Squares	df	Mean Square	F	Sig.
TPRI Score in Kindergarten	Between Groups	1.003	1	1.003	4.288	.040*
	Within Groups	37.648	161	.234		
	Total	38.650	162			
DRA score in Grade 1	Between Groups	.012	1	.012	.049	.826
	Within Groups	46.435	195	.238		
	Total	46.447	196			
DRA score in Grade 2	Between Groups	.498	1	.498	2.515	.115
	Within Groups	26.361	133	.198		
	Total	26.859	134			
TAKS Reading Scaled Score	Between Groups	574.017	1	574.017	.016	.898
	Within Groups	2477473.956	71	34893.999		
	Total	2478047.973	72			
TAKS Math Scaled Score	Between Groups	13898.685	1	13898.685	.494	.484
	Within Groups	2054024.462	73	28137.321		
	Total	2067923.147	74			
Ever retained in a grade	Between Groups	.027	1	.027	.374	.541
	Within Groups	23.007	316	.073		
	Total	23.035	317			
Absences in Kindergarten	Between Groups	65.100	1	65.100	3.652	.057
	Within Groups	4883.809	274	17.824		
	Total	4948.909	275			
Absences in Grade 1	Between Groups	54.109	1	54.109	5.220	.023*
	Within Groups	1979.705	191	10.365		
	Total	2033.813	192			
Absences in Grade 2	Between Groups	36.858	1	36.858	3.033	.084
	Within Groups	1677.285	138	12.154		
	Total	1714.143	139			
Absences in grade 3	Between Groups	60.672	1	60.672	2.649	.107
	Within Groups	1878.316	82	22.906		
	Total	1938.988	83			
Ever placed in special education	Between Groups	.055	1	.055	1.221	.270
	Within Groups	14.237	316	.045		
	Total	14.292	317			
Ever had a serious discipline incident reported to PEIMS	Between Groups	.002	1	.002	.045	.831
	Within Groups	13.382	316	.042		
	Total	13.384	317			

*p<.05

The One Way Analysis of Variance (ANOVA) procedure produces an analysis of the variance for a quantitative dependent variable by a single factor (independent) variable. In this case we have only one independent variable, which is program or no program participation. The far right column gives a calculation of the significant difference between the means. This researcher used the standard of significance ($p < .05$) to determine whether or not the independent variable (program or no program) had a significant effect upon the dependent variable. In the Analysis of Variance, significance of program effects is indicated for TPRI Score in kindergarten ($p = .040$) and absences in grade 1 ($p = .023$). However, more in depth study of each dependent variable is necessary to truly determine program effects, which is described in the discussion of the research questions.

RESEARCH QUESTION 1

Are there significant differences in academic achievement during the elementary school years, for participants and non-participants in an Even Start program?

As described in Chapter 3, the County Texas ISD employs different assessments to measure student achievement. At the kindergarten level, students are administered the Texas Primary Reading Inventory (TPRI) which measures student growth in pre-reading skills. No similar assessment exists for math achievement. Students are assessed individually in January and in May. For this study only May results were available. At the end of the assessment students are rated as either "developed" or "still developing" to grade level. For the purposes of this study, students were coded as 1 = developed or 0 = not developed at grade level. The County Texas ISD has been administering the TPRI consistently only for

the last two years. Consequently, TPRI data exists only for the kindergarten and first grade cohorts of students (*N = 163*). Following the Analysis of Variance, a Pearson Chi Square test was performed to measure significance ($p < .05$) between the independent variable of program participation or non-participation. Tables 5 and 6 show this calculation.

Table 5 TPRI Score in Kindergarten and Participation in Even Start Crosstabulation

Count

		Participated in Even Start		
		No	Yes	Total
TPRI Score in Kindergarten	not developed	57	6	63
	developed	78	22	100
	Total	135	28	163

Table 6 TPRI Score Chi Square Analysis

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.229[b]	1	.040*		
Continuity Correction(a)	3.397	1	.065		
Likelihood Ratio	4.527	1	.033		
Fisher's Exact Test				.054	.030
Linear-by-Linear Association	4.203	1	.040		
N of Valid Cases	163				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.82.

Of the 163 students for whom TPRI data was available, 28 participated in Even Start and 135 did not (Table 4). Of those students who participated in Even Start 22 (79%) scored "developed" on the TPRI. Of non-participants 78 (57%) scored "developed." The chi square test of dependence yielded a chi square value of 4.229 and a significance of $p = .040$ (asymp. Sig. 2-sided) indicating that the distribution of observed values in the table probably would

not happen by chance if the variables were independent. Since p =.040 is less than the alpha level of .05 we accept that participation in Even Start has a significant effect upon students scoring "developed" on the Texas Primary Reading Inventory at the end of kindergarten (p =.040). The Analysis of Variance (ANOVA) (Table 4) confirms this conclusion.

Since sample sizes between program and no-program cases are disparate, an independent samples T Test was performed to test for variance between samples. Table 7 describes this calculation.

Table 7 T Test TPRI in Kindergarten by Even Start Participation

Group Statistics TPRI Score in Kindergarten

Participated in Even Start	N	Mean	Std. Deviation	Std. Error Mean
Yes	28	0.79	0.418	0.079
No	135	0.58	0.496	0.043

Independent Samples Test TPRI Score in Kindergarten

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	36.519	0.000	2.071	161	0.040	0.208	0.100	0.010	0.406
Equal variances not assumed			2.317	44.305	0.025*	0.208	0.090	0.027	0.389

*p<.05

Based on Levene's Test for Equality of Variances, this researcher cannot say that variances among sample sizes are equal and use the results of the independent sample T Test associated with "equal variances not assumed" (bottom line). The T Test for equality of means confirms program significance (2-tailed) at the 0.025 level. It is also interesting and confirming to note that significance occurs whether or not equal variances are assumed (p =

0.040, p = 0.025).

In grades one and two, The County Texas ISD administers the Developmental Reading Assessment. Based upon the work of Joetta Beaver (2001) this assessment is administered individually and yields a score of "Early Emergent," "Emergent," "Transitional," or "Self-Extending." However, for the purposes of this study, to increase sample sizes, students were coded 0 for "early emergent" or "emergent" and 1 for "transitional or self-extending." The Analysis of Variance (Table 3) shows no significant difference between DRA scores for program and no-program participants ($p = .826$) in grade 1. More in depth analysis included a Chi Square tabulation (Tables 8 and 9) for Grade 1.

Table 8 DRA score in Grade 1 by Participation in Even Start Crosstabulation

Count

		Participated in Even Start		Total
		No	Yes	
DRA score in Grade 1	emergent or early emergent	63	12	75
	transitional or self-extending	101	21	122
Total		164	33	197

Table 9 DRA Score of Emergent or Emergent/Transitional or Self-Extending by Participation In Even Start Chi Square Test

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.049[b]	1	.825		
Continuity Correction[a]	.001	1	.980		
Likelihood Ratio	.049	1	.824		
Fisher's Exact Test				1.000	.494
Linear-by-Linear Association	.049	1	.825		
N of Valid Cases	197				

a. Computed only for a 2x2 table
b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 12.56.

Of the 197 students for whom DRA data exist, 33 students participated in the Even

Start Program and 164 did not. Of the 33 Even Start students 21 (64%) scored "transitional" or "self-extending" on the DRA. Of the 164 non-participants 101 (62%) scored "transitional" or "self-extending." The chi square test of dependence yielded a chi square value of .049 and a significance of .825.

Since p = .825 is much higher than the alpha level of .05 the data do not indicate that there is a significant difference between participants and non-participants in the Even Start Program on DRA achievement scores in grade 1. However, since the sample size differences between participants and non-participants are large, an independent Samples T Test was performed to investigate variance among samples. Table 10 describes this calculation.

Table 10 T Test DRA Grade 1 by Even Start Participation

Group Statistics DRA score in Grade 1

Participated in Even Start	N	Mean	Std. Deviation	Std. Error Mean
No	164	0.62	0.488	0.038
Yes	33	0.64	0.489	0.085

Independent Samples DRA score in Grade 1

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	0.216	0.642	-0.220	195	0.826	-0.021	0.093	-0.204	0.163
Equal variances not assumed			-0.220	45.772	0.827	-0.021	0.093	-0.208	0.167

Based on the assumptions for Levene's Test for Equality of Variances, this researcher accepts that variances among samples are equal (top line). The T Test indicates that the

mean difference is not statistically different (*p = 0.826)*. Thus, there are no significant differences between participants and non-participants on DRA score in grade 1.

For the DRA in grade 2 the ANOVA (Table 3) calculates a significance of .115, which is much higher than our alpha level of .05 requiring further analysis. Chi Square and Independent Samples T Test calculations regarding DRA score in grade 2 are discussed in Tables 11,12 and 13.

Table 11 DRA score in Grade 2 By Participated in Even Start Crosstabulation

		Participated in Even Start		Total
		No	Yes	
DRA score in Grade 2	early emergent or emergent	34	3	37
	transitional or self extending	79	19	98
Total		113	22	135

Table 12 Chi Square DRA Grade 2 Scoring Emergent or Early Emergent/Transitional or Self-Extending by Even Start Participation or non-Participation

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.505(b)	1	.113		
Continuity Correction(a)	1.747	1	.186		
Likelihood Ratio	2.813	1	.094		
Fisher's Exact Test				.189	.089
Linear-by-Linear Association	2.487	1	.115		
N of Valid Cases	135				

a Computed only for a 2x2 table

b 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.03.

Of the 135 students for whom DRA data exist for grade 2, 22 participated in Even Start and 113 did not. Of the 22 Even Start students 19 (87%) scored "transitional" or "extending" on the DRA. Of the 113 non-participants 79 (70%) scored "transitional" or

extending." The chi square test of dependence yielded a 2.505 value and a significance of .113, which is more significant than the ANOVA number of .115, however, not significant enough to determine program effect.

Further investigation with a T-Test was necessary considering disparate sample sizes. Table 13 describes this calculation.

Table 13 T Test DRA Grade 2 by Participation or Non-Participation in Even Start

Group Statistics DRA score in Grade 2

Participated in Even Start	N	Mean	Std. Deviation	Std. Error Mean
No	113	0.70	0.461	0.043
Yes	22	0.86	0.351	0.075

Independent Samples Test DRA score in Grade 2

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	16.338	0.000	-1.586	133	0.115	-0.165	0.104	-0.370	0.041
Equal Variances not assumed			-1.901	36.651	0.065	-0.165	0.087	-0.340	0.011

Based on Levene s Test for Equality of Variances, we used the row of results for "equal variances not assumed." The T Test shows no mean difference and a significance of 0.065. Therefore, there are no significant differences in DRA scores at grade 2 between Even Start participants and non-participants.

Since the direction of difference was toward significance of program effects for this

variable, this researcher wondered if the lack of significance of program effects was dependent upon sample size. That is, did the lack of cases in the Even Start group affect the significance? To test this question the researcher increased the size of the Even Start group with the same ratio of characteristics of the original group. These results are listed in Tables 14 and 15.

Table 14 DRA Grade 2 with larger Even Start Sample Size Crosstabulation

Indicator of whether or not DRA2 Score is Emergent, Transitional, Extending with increased Even Start Sample Size Crosstabulation

			Participated in Even Start		
			no	yes	total
Indicator of whether DRA2 is emergent transitional or extending	Emergent	Expected Count	24.8	24.2	49
		% within participated in Even Start	30.1%	13.6%	22.0%
	Transitional	Count	48	70	118
		Expected count	59.8	58.2	118
		% within participated in Even Start	42.5%	63.6%	52.9%
	Extending	Count	31	25	56
		Expected count	28.4	27.6	56.0
		% within participated in Even Start	27.4%	22.7%	25.1%
	Total	Count	113	110	223
		Expected count	113	110	223
		% within participated in Even Start	100%	100%	100%

Table 15 Chi Square Test with increased Even Start Sample size on DRA grade 2

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.074[a]	2	.002
Likelihood Ratio	12.294	2	.002
Linear-by-Linear Association	1.629	1	.202
N of Valid Cases	223		

a. 0 cells (.0%) have expected counts less than 5.

b. The minimum expected count is 24.17.

After increasing the sample size of Even Start participants at the same percentages of the original sample, it appears that significance does exist at the 0.02 level. From this calculation the data suggest that a larger sample size of Even Start participants would have yielded significant program effects on DRA score at grade 2.

In grade 3, the County Texas ISD administers the Texas Assessment of Knowledge and Skills (TAKS) in reading and math. Initially, a T Test was used to measure significance of program effects. Table 16 describes this calculation.

Table 16 TAKS Scores Grade 3 T Test

Group Statistics

	Participated in Even Start	N	Mean	Std. Deviation	Std. Error Mean
TAKS Reading Scale Score	No	63	2,183.44	178.446	22.482
	Yes	10	2,191.60	236.457	74.774
TAKS Math Scale Score	No	65	2,100.55	143.112	17.751
	Yes	10	2,140.60	287.372	90.875

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
TAKS Reading Scaled Score	Equal variances assumed	2.610	0.111	-0.128	71	0.898	-8.156	63.587	-134.944	118.633
	Equal variances not assumed			-0.104	10.688	0.919	-8.156	78.081	-180.624	164.313
TAKS Math Scaled Score	Equal variances assumed	10.125	0.002	-0.703	73	0.484	-40.046	56.979	-153.605	73.513
	Equal variances not assumed			-0.432	9.698	0.675	-40.046	92.592	-247.229	167.137

While it is interesting to note that the mean scale score on TAKS reading and math is slightly higher among Even Start participants, it is not significantly so. Levene s Test shows that regardless of whether or not equal variances are assumed the means are not significantly different. That is, all significance (2-tailed) values are much higher than .05. Referring back to Table 3, the ANOVA reports similar findings. As shown earlier, significance in this study may be affected by sample size.

Regarding the question of significance in student achievement, it appears that the Even Start program participants show significantly higher achievement only in kindergarten.

This is consistent with the current literature, which reports significant program effects at early stages only.

RESEARCH QUESTION 2

Are there significant differences in student retention rates, during the elementary school years, for participants and non-participants in an Even Start program?

In the County Texas ISD, students who are retained in grade, for any reason are reported to the state PEIMS system. Data for this question were retrieved from district databases. The Analysis of Variance (Table 3) calculates program significance at .541, much higher than our alpha level of .05. Further investigation included a Chi Square crosstabulation. Tables 17 and 18 describe these calculations.

Table 17 Ever retained in a grade by Participation in Even Start Crosstabulation

		Participated in Even Start		Total
		No	Yes	
Ever retained in a grade	No	244	49	293
	Yes	22	3	25
Total		266	52	318

Table 18 Ever Retained in a Grade Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.376[b]	1	.540		
Continuity Correction[a]	.110	1	.740		
Likelihood Ratio	.404	1	.525		
Fisher's Exact Test				.779	.390
Linear-by-Linear Association	.375	1	.541		
N of Valid Cases	318				

a Computed only for a 2x2 table

b 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.09.

Of the 318 cases in this study 52 participated in Even Start and 266 did not. Of the 52 Even Start students, 3 (5%) were ever retained in a grade. Of the 266 non-participants 22 (8%) were ever retained in a grade. The chi square test of dependence yielded a value of .376 and a significance of .540 that permits a conclusion that there are no significant differences in retention rates, which is consistent with the ANOVA (Table 3) findings. Due to small sample size and the lack of information in cells on the chi square, a T Test was performed to test for difference in sample size. Table 19 reports these calculations.

Table 19 T Test Ever Retained in a Grade

Group Statistics Ever retained in a grade

Participated in Even Start	N	Mean	Std. Deviation	Std. Error Mean
Yes	52	0.06	0.235	0.033
No	266	0.08	0.276	0.017

Independent Samples Test Ever retained in a grade

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	1.563	0.212	-0.611	316	0.541	-0.025	0.041	-0.106	0.055
Equal variances not assumed			-0.680	80.949	0.498	-0.025	0.037	-0.098	0.048

Levene s' Test for Equality of Variances confirms that variances are not equal *(p =0.212)* and that there is no significant difference in the retention rates of Even Start participants and non-participants (*p =0.498)*.

RESEARCH QUESTION 3

Are there significant differences in the attendance rates, during the elementary school years, of participants and non-participants in an Even Start program?

Attendance rates for this study were calculated by reporting the number of absences per year by student by grade level. Four years of longitudinal data exist for this question, which is reported by year. The Analysis of Variance found significance only at grade 1 (*p =.023*) However more in depth analysis yielded quite different results. Tables 20 through

27 report Chi Square crosstabulations for each grade level.

Table 20 Absences in Kindergarten by Participation in Even Start Crosstabulation

		Participated in Even Start		Total
		No	Yes	
Absences in Kindergarten	0	14	6	20
	1	21	8	29
	2	21	9	30
	3	31	4	35
	4	25	4	29
	5	14	2	16
	6	20	5	25
	7	16	2	18
	8	16	1	17
	9	10	4	14
	10	11	2	13
	11	9	0	9
	12	3	0	3
	13	7	0	7
	14	2	1	3
	15	2	0	2
	17	1	0	1
	18	1	0	1
	20	2	0	2
	21	1	0	1
	25	0	1	1
Total		227	49	276

Table 21 Absences in Kindergarten by participation in Even Start Chi Square

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22.815[a]	20	.298
Likelihood Ratio	25.767	20	.174
Linear-by-Linear Association	3.617	1	.057
N of Valid Cases	276		

a 25 cells (59.5%) have expected count less than 5. The minimum expected count is 18.

According to the chi square test there are no significant differences in absences between participants and non-participants in the Even Start program ($p = .298$) at the kindergarten level.

Table 22 Absences in Grade 1 by Participation in Even Start Crosstabulation

		Participated in Even Start		
		No	Yes	Total
Absences in Grade 1	0	19	9	28
	1	25	4	29
	2	19	6	25
	3	11	3	14
	4	17	3	20
	5	17	1	18
	6	14	2	16
	7	10	1	11
	8	12	0	12
	9	4	2	6
	10	9	1	10
	12	2	0	2
	14	2	0	2
Total		161	32	193

Table 23 Chi-Square Tests Absences in Grade 1

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.266[a]	12	.350
Likelihood Ratio	15.312	12	.225
Linear-by-Linear Association	5.108	1	.024
N of Valid Cases	193		

a. 15 cells (57.7%) have expected count less than 5. The minimum expected count is 33.

According to the Chi Square calculation, there are no significant differences in absences between participants and non-participants in the Even Start program at grade 1 (*p = .350)*.

Table 24 Absences in Grade 2 by Participation in Even Start Crosstabulation

		Participated in Even Start		Total
		No	Yes	
Absences in Grade 2	0	22	8	30
	1	17	4	21
	2	11	1	12
	3	14	2	16
	4	15	1	16
	5	9	1	10
	6	2	3	5
	7	9	1	10
	8	5	1	6
	9	5	0	5
	10	3	0	3
	11	2	0	2
	13	2	0	2
	15	1	0	1
	17	1	0	1
Total		118	22	140

Table 25 Chi-Square Tests Absences in Grade 2

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.105[a]	14	.371
Likelihood Ratio	14.965	14	.381
Linear-by-Linear Association	2.989	1	.084
N of Valid Cases	140		

a 22 cells (73.3%) have expected count less than 5.
The minimum expected count is .16.

According to the chi square crosstabulation there are no significant differences in the number of absences between participants and non-participants in the Even Start program at grade 2 ($p = .371$).

Table 26 Absences in grade 3 by Participation in Even Start Crosstabulation

		Participated in Even Start		
		No	Yes	Total
Absences in grade 3	0	10	4	14
	1	12	1	13
	2	13	2	15
	3	10	1	11
	4	6	1	7
	5	2	1	3
	6	3	0	3
	7	4	0	4
	8	4	0	4
	9	2	0	2
	10	1	0	1
	11	1	0	1
	12	2	0	2
	14	1	0	1
	15	1	0	1
	16	1	0	1
	32	1	0	1
Total		74	10	84

Table 27 Chi-Square Tests Absences in Grade 3 by Even Start Participation

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.229[a]	16	.942
Likelihood Ratio	9.478	16	.892
Linear-by-Linear Association	2.597	1	.107
N of Valid Cases	84		

a 29 cells (85.3%) have expected count less than 5. The minimum expected count is 12.

According to the Chi Square calculations, there are no significant differences in the amount of absences between program and non-program participants at any grade level. The difference in kindergarten was reported as p =.298, grade 1 at p =.*350*, grade 2 at p =.371 and grade 3 at p =.942 respectively. The ANOVA (Table 3), however, reports a significance in number of absences at grade 1 (p =.023). The significance of absences at grades 2 and 3 are also different at .084 and .107 respectively. These results prompted further investigation. Suspecting that small sample size affected significance, a new variable was added for third grade students including the total number of absences summed from kindergarten through grade three. An independent T Test was used to measure any further significance. Table 28 shows these calculations.

Table 28 T Test Sum of Absences Grade K-3

Group Statistics

	Participated in Even Start	N	Mean	Std. Deviation	Std. Error Mean
Absences in Kindergarten	Yes	49	4.31	4.501	0.643
	No	227	5.58	4.160	0.276
Sum of absences for K and 1	Yes	31	6.516	4.9791	0.8943
	No	139	10.101	6.5245	0.5534
Sum of absences for K, 1, and 2	Yes	20	7.650	5.8334	1.3044
	No	76	14.658	9.1061	1.0445
Sum of absences for K, 1, 2, and 3	Yes	9	10.333	8.8318	2.9439
	No	37	20.243	13.4545	2.2119

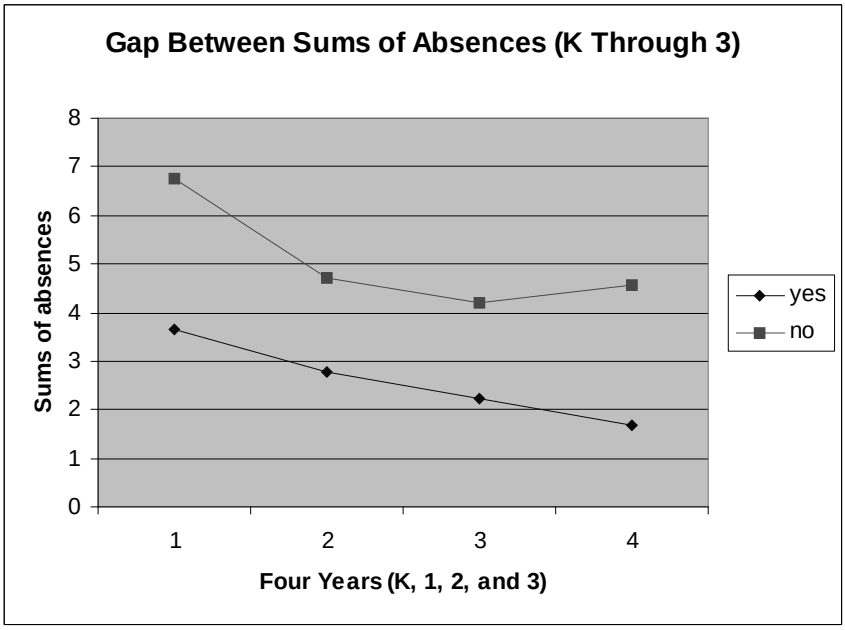
Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Absences in Kindergarten	Equal variances assumed	0.033	0.856	-1.911	274	0.057	-1.271	0.665	-2.580	0.038
	Equal variances not assumed			-1.816	66.853	0.074	-1.271	0.700	-2.668	0.126
Sum of absences for K and 1	Equal variances assumed	2.786	0.097	-2.875	168	0.005	-3.5846	1.2467	-6.0458	-1.1234
	Equal variances not assumed			-3.409	55.604	0.001	-3.5846	1.0517	-5.6916	-1.4775
Sum of absences for K, 1, and 2	Equal variances assumed	4.385	0.039	-3.263	94	0.002	-7.0079	2.1478	-11.2724	-2.7434
	Equal variances not assumed			-4.194	46.352	0.000	-7.0079	1.6711	-10.3709	-3.6449
Sum of absences for K, 1, 2, and 3	Equal variances assumed	1.098	0.300	-2.093	44	0.042	-9.9099	4.7348	-19.4523	-0.3675
	Equal variances not assumed			-2.691	18.287	0.015	-9.9099	3.6823	-17.6374	-2.1824

In discussing this variable it is important to note that only 276 cases were available for kindergarten absence data, 170 cases for grades K and 1, 96 cases for grades k, 1 and 2

and 46 cases for grade K, 1, 2 and 3. However, according to the Independent Samples T Test, significance in the amount of absences between program and no program students continues to be significant up to the third grade (*p =.015)*. This is a substantial finding of program effect. These results are graphed in Figure 1.

Figure 1: Graph of Gap Between Sum of Absences grades K through 3



From these results it appears that participation in the Even Start Program continues to have an effect upon absences through grade 3. Absences appear to decline for participants while taking an upward turn for non-participants.

Similarly, when computing the median number of absences and whether or not Even Start participants are likely to have below the median number of absences (a positive effect), the data suggest that in every grade level, from kindergarten through grade 3, the percentage of students below the median is higher for Even Start program participants. Tables 29 - 35 describe these calculations.

Table 29 Median Absences by Grade Level

		Absences in Kindergarten	Absences in Grade 1	Absences in Grade 2	Absences in Grade 3	Sum of absences for K, 1, 2 and 3
N	Valid	276	193	140	84	46
	Missing	42	125	178	234	272
Mean		5.35	3.97	3.64	4.01	18.304
Median		4.00	4.00	3.00	2.50	16.500

From Table 29 we note that the median number of absences in kindergarten for all students was 4.00. Median number of absences in grades 1, 2 and 3 were 4.00, 3.00 and 2.50, respectively. Median absences for grades kindergarten through 3 were 16.50. Crosstabulations are listed in Tables 30 through 35.

Table 30 Indicator of whether or not the number of absences in Grade K is below the median by Participation in Even Start Crosstabulation

		Participated in Even Start		
		no	yes	total
Below the median	Count	87	27	114
	Expected count	93.8	20.2	114.0
	% within participated in Even Start	38.3%	55.1%	41.3%
Not below the median	Count	140	22	162
	Expected count	133.2	28.8	162.0
	% within participated in Even Start	61.7%	44.9%	58.7%
Total	Count	227	49	276
	Expected count	227.0	49.0	276.0
	% within participated in Even Start	100%	100%	100%

Table 31 Chi Square Test of whether or not Even Start Absences are below the median

	Value	df	Asymp. Sig. (2-sided)	Exact. Sig. (2-sided)	Exact. Sig. (1-sided)
Pearson Chi-Square	4.678[b]	1	.031		
Continuity Correction[a]	4.012	1	.045		
Likelihood Ratio	4.610	1	.032		
Fisher's Exact Test				.037	.023
Linear by Linear Association	4.661	1	.031		
N of Valid Cases	276				

a. Computed only for a 2x2 table
b. 0 cells (0%) have expected count less than 5. The minimum expected count is 20.

The median number of absences in Kindergarten was 4 (Table 30) and 55.1% of Even Start students accumulated below the median number of absences compared to 38.3% of non-program students. According to the chi square test (Table 31) the difference between program and no program students is significant at the .031 level.

Table 32 Grade 1 Indicator of whether or not the number of absences in Grade 1 is below the median by Participation in Even Start Crosstabulation

		Participated in Even Start		
		no	yes	total
Below the median	Count	74	22	96
	Expected count	80.1	15.9	96.0
	% within participated in Even Start	46.0%	68.8%	49.7%
Not below the median	Count	87	10	97
	Expected count	80.9	16.1	97.0
	% within participated in Even Start	54.0%	31.3%	50.3%
Total	Count	161	32	193
	Expected count	161.0	32.0	193.0
	% within participated in Even Start	100%	100%	100%

Table 33 Chi Square Test of Whether or not Absences are below the Median at Grade 1

	Value	df	Asymp. Sig. (2-sided)	Exact. Sig. (2-sided)	Exact. Sig. (1-sided)
Pearson Chi-Square	5.545[b]	1	.019		
Continuity Correction[a]	4.671	1	.031		
Likelihood Ratio	5.658	1	.017		
Fisher's Exact Test				.021	.015
Linear by Linear Association	5.516	1	.019		
N of Valid Cases	193				

a. Computed only for a 2x2 table
b. 0 cells (0%) have expected count less than 5. The minimum expected count is 15.92

In grade 1, 68.8% of Even Start participants accumulated below the median number of 4 absences, while 46% of non-participants accumulated below the median number of absences. According to the chi square test, the difference between the percentages is significant at the .019 level.

Table 34 Indicator of whether or not the number of absences in Grade 2 is below the median by Participation in Even Start Crosstabulation

		Participated in Even Start		
		no	yes	total
Below the median	Count	50	13	63
	Expected count	53.1	9.9	63.0
	% within participated in Even Start	42.4%	59.1%	45.0%
Not below the median	Count	68	9	77
	Expected count	64.9	12.1	77.0
	% within participated in Even Start	57.6%	40.9%	55.0%
Total	Count	118	22	140
	Expected count	118.0	22.0	140.0
	% within participated in Even Start	100%	100%	100%

Table 35 Chi Square Whether or not Even Start Absences are below the median at Grade 2

	Value	df	Asymp. Sig. (2-sided)	Exact. Sig. (2-sided)	Exact. Sig. (1-sided)
Pearson Chi-Square	2.094[b]	1	.148		
Continuity Correction[a]	1.473	1	.225		
Likelihood Ratio	2.086	1	.149		
Fisher's Exact Test				.167	.113
Linear by Linear Association	2.079	1	.149		
N of Valid Cases	140				

a. Computed only for a 2x2 table
b. 0 cells (0%) have expected count less than 5. The minimum expected count is 9.90

At grade 2, 59.1% of even start students were below the median number of absences while 42.4% of non-participants accumulated below the median number of 3 absences. According to the chi square test the difference in these percentages is not significant *(p = .148)*. However, the data suggest that the extreme difference in sample size affected results. Tables 36 and 37 describe calculations for adjusted sample size.

Table 36 Indicator of whether or not the number of absences in Grade 2 is below the median* Participated in Even Start Crosstabulation with Increased Even Start Sample Size

		Participated in Even Start		
		no	yes	total
Below the median	Count	50	65	115
	Expected count	59.5	55.5	115.0
	% within participated in Even Start	42.4%	59.1%	50.4%
Not below the median	Count	68	45	113
	Expected count	58.5	54.5	113.0
	% within participated in Even Start	57.6%	40.9%	49.6%
Total	Count	118	110	228
	Expected count	118.0	110.0	228.0
	% within participated in Even Start	100%	100%	100%

Table 37 Chi Square Whether or not the number of Absences in Grade 2 is Below the Median with increased Even Start Sample Size

	Value	df	Asymp. Sig. (2-sided)	Exact. Sig. (2-sided)	Exact. Sig. (1-sided)
Pearson Chi-Square	6.365[b]	1	.012		
Continuity Correction[a]	5.714	1	.017		
Likelihood Ratio	6.396	1	.011		
Fisher's Exact Test				.012	.008
Linear by Linear Association	6.337	1	.012		
N of Valid Cases	228				

a. Computed only for a 2x2 table
b. 0 cells (0%) have expected count less than 5. The minimum expected count is 54.52

After increasing the sample size at the same percentages of absences, the Chi Square (Table 36) does indicate significance (2-sided) (*p = .012*). Therefore, Even Start students had significantly fewer absences in grade 2. The same issue of extreme disparity in sample sizes also occurs in grade 3 data as described in Tables 38 and 39.

Table 38 Indicator of whether or not the number of absences in Grade 3 is below the median Participated in Even Start Crosstabulation

		Participated in Even Start		
		no	yes	total
Below the median	Count	35	7	42
	Expected count	37.0	5.0	42.0
	% within participated in Even Start	47.3%	70.0%	50.0%
Not below the median	Count	39	3	42
	Expected count	37.0	5.0	42.0
	% within participated in Even Start	52.7%	30.0%	50.0%
Total	Count	74	10	84
	Expected count	74.0	10.0	84.0
	% within participated in Even Start	100%	100%	100%

Table 39 Chi Square Whether or Not Absences at Grade 3 are Below the Median

	Value	df	Asymp. Sig. (2-sided)	Exact. Sig. (2-sided)	Exact. Sig. (1-sided)
Pearson Chi-Square	1.816[b]	1	.178		
Continuity Correction[a]	1.022	1	.312		
Likelihood Ratio	1.862	1	.172		
Fisher's Exact Test				.313	.156
Linear by Linear Association	1.795	1	.180		
N of Valid Cases	84				

a. Computed only for a 2x2 table
b. 0 cells (0%) have expected count less than 5. The minimum expected count is 5.00

The significance for absences in grade 3 is (*p = .178)* indicating no significance. However, if the Even Start sample size is increased in the same manner as in grade 2, we find the results listed below in Tables 40 and 41.

Table 40 Indicator of whether or not the number of absences in Grade 3 is below the median* Participated in Even Start Crosstabulation with Increased Sample Size

		Participated in Even Start		
		no	yes	total
Below the median	Count	35	56	91
	Expected count	43.7	47.3	91.0
	% within participated in Even Start	47.3%	70.0%	59.1%
Not below the median	Count	39	24	63
	Expected count	30.3	32.7	63.0
	% within participated in Even Start	52.7%	30.0%	40.9%
Total	Count	74	80	154
	Expected count	74.0	80.0	154.0
	% within participated in Even Start	100%	100%	100%

Table 41 Whether or Not Absences at Grade 3 are Below the Median with Increased Sample Size

	Value	df	Asymp. Sig. (2-sided)	Exact. Sig. (2-sided)	Exact. Sig. (1-sided)
Pearson Chi-Square	8.196[b]	1	.004		
Continuity Correction[a]	7.284	1	.007		
Likelihood Ratio	8.262	1	.004		
Fisher's Exact Test				.005	.003
Linear by Linear Association	8.143	1	.004		
N of Valid Cases	154				

a. Computed only for a 2x2 table
b. 0 cells (0%) have expected count less than 5. The minimum expected count is 30.27

When sample sizes are closer in number, significance in percentages above and below the median number of absences are significant at the .004 level for Even Start participants.

From these calculations the data suggest that in every grade level from Kindergarten through grade 3, the expected percentage of students below the median number of absences (a good outcome) is higher for students who have experienced the Even Start program. Also, in every grade level from Kindergarten through grade 3, the expected percentage of students above the median number of absences is higher (an undesirable outcome) for students who have not experienced the Even Start program. These results indicate a substantially positive and continuing program effect.

RESEARCH QUESTION 4

Are there differences in placement in special education during the elementary school years for participants and non-participants in an Even Start program?

The County Texas ISD places children in special education according to academic

need and determination of disability under the Individuals with Disabilities Education Act (2004). Disabilities covered under this law are speech or language impairments, specific learning disabilities, hearing impairments, orthopedic impairments, other health impairments, visual impairments, emotional disturbance, autism, deaf-blindness, mental retardation, traumatic brain injury, multiple disabilities and developmental delay. For the purposes of this study, students were coded as ever placed in special education = 1, or not = 0. Category of disability was not examined due to extremely small sample size and the need for confidentiality. The Analysis of Variance calculates significance at the .270 level indicating no program effect. Tables 42 and 43 display Chi Square tabulations for program and non-program participants placed in special education with similar results.

Table 42 Special Education Placement Ever placed in special education

Participated in Even Start Crosstabulation

		Participated in Even Start		Total
		No	Yes	
Ever placed in special education	No	255	48	303
	Yes	11	4	15
Total		266	52	318

Table 43 Chi-Square Tests Ever Placed in Special Education

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.224[b]	1	.268		
Continuity Correction[a]	.561	1	.454		
Likelihood Ratio	1.075	1	.300		
Fisher's Exact Test				.281	.217
Linear-by-Linear Association	1.221	1	.269		
N of Valid Cases	318				

a Computed only for a 2x2 table
b 1 cells (25.0%) have expected count less than 5. The minimum expected count is 2.45.

Of the 318 cases in this study, 52 students participated in Even Start and 266 did not. Of the 52 Even Start students, 4 (8%) were ever placed in special education. Of the 266 non-participants 11 (4%) were ever placed in special education. The chi square test of dependence yielded a value of 1.224 and a significance of .217 suggesting the conclusion that there is no significant difference between Even Start participants and non-participants and placement in special education. Similarly the T Test in Table 44 yielded a significance of 0.368.

Table 44 T Test Special Education Ever Placed in Special Education

Group Statistics Ever placed in special education

Participated in Even Start	N	Mean	Std. Deviation	Std. Error Mean
Yes	52	0.08	0.269	0.037
No	266	0.04	0.199	0.012

Independent Samples Test Ever placed in special education

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	4.696	0.031	1.105	316	0.270	0.036	0.032	-0.028	0.099
Equal variances not assumed			0.906	62.410	0.368	0.036	0.039	-0.043	0.114

RESEARCH QUESTION 5

Are there significant differences in recorded disciplinary incidents, during the

elementary school years, for participants and non-participants in the Even Start program?

Along with all other Texas school districts, the County Texas ISD is required to report to the state serious disciplinary incidents requiring a student s removal from the educational environment. Data for this research question were retrieved from district databases. Students were coded as disciplinary incident reported = 1 or no incidents reported = 0. The ANOVA indicates no program effect (*p = .831*). Tables 45 and 46 report chi square crosstabulations for reported disciplinary incidents with similar results.

Table 45 Ever had a serious discipline incident reported to PEIMS by Participation in Even Start Crosstabulation

		Participated in Even Start		Total
		No	Yes	
Ever had a serious discipline incident reported to PEIMS	No	254	50	304
	Yes	12	2	14
Total		266	52	318

Table 46 Serious Disciplinary Incidents Chi-Square Test

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.046[b]	1	.831		
Continuity Correction[a]	.000	1	1.000		
Likelihood Ratio	.047	1	.828		
Fisher's Exact Test				1.000	.592
Linear-by-Linear Association	.046	1	.831		
N of Valid Cases	318				

a Computed only for a 2x2 table
b 1 cells (25.0%) have expected count less than 5. The minimum expected count is 2.29.

Of the 318 cases in this study, 52 participated in the Even Start Program and 266 did

not. Of the 52 Even Start participants 2 (4%) had serious incidents reported to PEIMS. Of the 266 non-participants 12 (5%) had serious incidents reported to PEIMS. The chi square crosstabulation yields a small value of 0.46 and a significance of .592, which is consistent with the ANOVA results. Similarly the Independent Samples T Test yields significance at the 0.831 level. Table 47 describes these calculations.

Table 47 T Test Serious Discipline Incidents

Group Statistics Ever had a serious discipline incident reported to PEIMS

Participated in Even Start	N	Mean	Std. Deviation	Std. Error Mean
Yes	52	0.04	0.194	0.027
No	266	0.05	0.208	0.013

Independent Samples Test Ever had a serious discipline incident reported to PEIMS

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	0.184	0.669	-0.213	316	0.831	-0.007	0.031	-0.068	0.055
Equal variances not assumed			-0.223	75.696	0.824	-0.007	0.030	-0.066	0.053

Therefore, this researcher assumes that there is no significant difference in reported serious disciplinary incidents between program and non-program participants. However, whether or not to report an incident to the PEIMS system is open to interpretation by the

reporting administrator. The data for this study were obtained over four years and from four different campuses. Consistency in reporting both among administrators on a single campus over years and between campuses is questionable. Also, the actual reporting of the incident assumes the student was actually guilty of the act, which may also be open to interpretation. All of the students in the study were under age 10 and no incidents were adjudicated.

From the calculations in this chapter, we find that sample size of the Even Start population was a limitation in determining program significance in the question of student achievement and attendance rate. The finding of initial positive effect in student achievement in kindergarten is consistent with current research. However, when we remember that all students in this study are second language learners, such initial positive outcomes may be more significant to local decision makers.

Positive effects upon student attendance were originally inconclusive. However, once sample sizes were increased at the same ratio of the original sample, substantial significance was found in attendance. The findings in this study regarding attendance rate are encouraging with potential long-term positive effects for students and the school district.

Further discussion of findings and limitations to this study are discussed in Chapter Five.

CHAPTER FIVE

DISCUSSION AND RECOMMENDATIONS

Legislation at the state and federal levels has attempted to produce greater public school accountability for the achievement of all students, particularly underserved populations. Public schools today encounter great pressure from the state and federal government to close the achievement gap between middle class and lower socioeconomic students; between Anglo students and ethnically, linguistically and culturally diverse students and between students with disabilities and non-disabled students.

Closing the achievement gap is especially important for English language learners. In the United States an estimated 9.9 million of the total 45 million school-aged children, live in households where languages other than English are spoken. In Texas, the English Language Learner (ELL) population has increased by 45 percent over the last ten years, currently accounting for 15 percent of Texas students (National Center for Educational Statistics, 2003). According to recent analyses and reports by many agencies and commissions, the academic performance of Hispanic students continues to be below majority norms and the high school drop out rate remains consistently high, particularly for those who enter the school system as English Language Learners (President s'Advisory Council on Educational Excellence for Hispanic Americans, 1996).

In Texas, Hispanic students are the largest ethnic group and the percentage of English language learners continues to rise (National Center for Educational Statistics, 2003). The problem is how to find programs and teaching methods that are effective with these

underserved populations, particularly English language learners. In the current climate of decreased funding and increased accountability it is imperative that school leaders make informed choices with regard to the timing and quality of interventions. The Even Start Early Childhood Program in this study is one intervention that targets families and students who are English Language Learners.

Although not exclusively designed for English Language Learners, the Even Start program in County ISD enrolls virtually only students for whom Spanish is the first language and the language typically spoken in the home. Interestingly, national and Texas research regarding the efficiency of the Even Start program has focused mainly on parent outcomes (St. Pierre, et al., 1998; Seaman, 2000). Very little information exists on whether or not the program yields positive student outcomes and virtually no research has addressed the intervention with regard to effect upon English language learners or their parents.

The purpose of this study was to examine the effect of the Even Start program in the County Texas ISD as measured by five dependent variables: student achievement, retention in grade, student attendance, special education placement and serious disciplinary incidents. The independent variable was program participation or non-participation.

All of the participants in this study were English language learners enrolled in bilingual programs in four schools within the County Independent School District. Samples of participants and non-participants were derived from all students in bilingual programs in kindergarten through grade three at the four schools. Data for students above grade three were not available, which curtailed the scope of this study. The Even Start population was smaller than the control population for all variables studied, which also may have affected results. In some cases significance was found when the treatment sample was increased at

the same ratio of the original sample. It is also important to note that even though these students were English Language learners, all assessment data at grade 1 and above appeared to be in English only. Texas Primary Reading Inventory (TPRI) data in kindergarten are reported in the same way regardless of language of assessment. Whether or not students were assessed with the English TPRI or the Spanish equivalent, Tejas Lee, was impossible to determine from district data sets. In Texas, language of instruction and language of assessment are determined by a Language Proficiency Assessment Committee (LPAC). Whether or not assessing bilingual students in English was district policy or a problem of reporting of testing data is unknown. Had LPAC records been available this researcher may have been able to answer this question. Further discussion of this study will focus upon the five research questions.

Research Question 1

Are there significant differences in academic achievement, during the elementary school years, for participants and non-participants in an Even Start Program?

The results of research are mixed regarding the effect of preschool participation on future academic achievement. Ramey et al. (2000) found that preschool participants did better than their peers on standardized achievement tests as did Barnett et al. (1998), indicating sustained improvement in educational outcomes. However, in a study of state preschool programs, Gilliam and Ziegler (2000) found only short-term positive effects. Head Start programs have produced unclear results regarding long-term impact on student achievement (Currie, 2000). Even Start programs have also generally demonstrated only

short-term achievement gains for participants (St. Pierre et al., 1998, 2003; Quie, 2003). The results of this study provided more promising outcomes in certain specific areas.

In the County Texas ISD students are administered the Texas Primary Reading Inventory (TPRI) in kindergarten. The state also provides a Spanish version of the TPRI called the Tejas Lee. It is important to note that it was unclear from the data sets from some schools whether or not students took the English or Spanish version of the TPRI because scores are reported in the same way regardless of language of assessment. This study found that Even Start participants were significantly more likely to score "developed" (a positive outcome) on the TPRI than non-participants, which is consistent with the research noting positive academic effects in early years. However, these results may not be sustained over time (Ramey, et al., 2000; Barnett, Young & Schweinhart, 1998).

However, this finding is particularly significant if Spanish dominant students were assessed in English. All of the students in this study were enrolled in bilingual programs; however, examination of the curricula used in these programs was not part of this study. It is unclear from the data sets whether students were instructed primarily in Spanish or in English. It is possible that students were taught in the home language (Spanish) and assessed in English. One would not expect a child who is developing a second language (English) to perform as well as native English speakers on assessment, which makes the outcomes on the TPRI even more indicative of Even Start effects upon achievement.

In the context of this study, it is unclear as to whether school age students in the Even Start program were taught and assessed in the second language (English) rather than in the primary language (Spanish). It is true, according to Even Start personnel, that all academic assessments and interventions with children at the Even Start center were conducted in

English. It is important to note that students served at the Even Start Center are under school age (0 to age 3). According to leading researchers in the field of bilingual education, effective instruction for English Language Learners should begin with the native language while adding the second language over time. Adding English must be seen as "enrichment" rather than "remediation" (Bialystok, 1991; Hakuta & McLaughlin, 1996; Lindholm-Leary, 2001). The expectation for students in early grades being instructed and assessed in English may have had a dramatic effect upon later achievement. That is, perhaps sustained effects upon achievement were affected by lack of instruction and assessment in the child's first language.

A limitation of this study is the small sample size of Even Start participants, which did not affect TPRI outcomes, but did play a factor in statistical analysis of achievement outcomes in grades one and two. Initial investigation of the dependent variable of student achievement in grades 1 and 2 with respect to the Developmental Reading Assessment (Beaver, 2001) score yielded no significance. However, once program sample size was increased with the same ratio of characteristics as the original group significance was detected. From this calculation we can only surmise that the disparity in sample sizes constrained significance.

In grades one and two, students are administered the Developmental Reading Assessment (Beaver, 2001) which yields a score of "Early Emergent," "Emergent," "Transitional" or "Self-Extending." A positive outcome for this assessment would be "Transitional" or "Self-Extending," however examination of the Developmental Reading Assessment records for grades one and two yielded many inconsistencies. It is also important to note that data from the Developmental Reading Assessment appeared to be only

in English. Why the district did not administer the TPRI and Tejas Lee in grades one and two is not known.

Records for these students came from four different campuses within the County Texas ISD. The way data were reported indicated that assessments were interpreted differently at each campus. Some campuses reported numeric scores while others reported nominal data, which indicated a lack of consistent implementation across the district. The rating scales for the DRA appear to be quite subjective, adding a threat to validity, however no other assessment data exists for students in grades one and two.

The eclectic implementation of testing at grades one and two makes analysis and generalization difficult. While it appears that Even Start program students had significantly more positive outcomes at grade 2 on the DRA, it is difficult to be sure whether or not outcomes were tainted by teacher or campus reporting methodologies. This finding is significant for the school district when implementing future testing programs. It is imperative that school districts provide training in explicit methods for reporting data in order to facilitate program efficiency evaluations.

In grade three all students in Texas are administered the Texas Assessment of Knowledge and Skills (TAKS) in reading and in math. While this study found that the mean scores for Even Start participants were slightly higher than non-participants in reading and in math, they were not significantly so. It is also important to note that testing data received from the district did not indicate language of assessment although Spanish language versions of the assessments are available.

When discussing the results of tests regarding student achievement and English Language Learners, it is important to note current research regarding second language

acquisition and academic parity. According to Thomas and Collier (1997), who studied more than 700,000 English Language Learners, a successful program for English language learners is "one whose typical students reach long-term parity with national native-English speakers (50^{th} percentile on a nationally standardized test) or whose local English learners reach the average level of native-English speaking students in the local school system" (p. 7).

In order to achieve such parity, English language learners must receive strong academic and cognitive development in their first language (Spanish) at least through fifth grade while adding their second language (English). Others in the field of bilingual education (Bialystok, 1991; Hakuta & McLaughlin, 1996; Lindholm-Leary, 2001) report that, in the United States students who are learning English are often perceived as "broken" and in need of "fixing." Schools may try to fix "that which is "broken" by utilizing pull out programs for intensive ESL (English as a Second Language) instruction or English "immersion" programs, thereby hurrying the child into learning in the dominant language (English).

In Texas, students are placed in Bilingual or ESL programs by a Language Proficiency Assessment Committee (LPAC) made up of the child's teacher, another bilingual/ESL instructor on the campus, an administrator and a parent of a bilingual student. Students are referred to the LPAC when, upon admission to the school, the parent lists the home language as any language other than English. Children are then tested as to proficiency in English and the home language and the LPAC committee places the student in language support programs such as bilingual education, ESL or regular education programs according to testing results and the expertise of the committee.

All of the students in this study were placed in bilingual programs through an LPAC committee. However, the specifics of the bilingual program in the County Texas ISD do not appear to be standardized from classroom to classroom or from campus to campus which may or may not have affected the results of this study, but is an important finding for the school district. This lack of standardization may explain the lack of significant difference in academic achievement after students began formal academic instruction in grades 1, 2 and 3.

Research Question 2

Are there significant differences in retention rates, during the elementary school years, for participants and non-participants in an Even Start program?

Research reports no significant difference in retention rate for young children who have participated in early interventions (Anson et al., 1991, Barnett, 1995, Currie, 2000, Haynes, 1998, Quie, 2003, Ramey & Ramey, 1998). This study also found no significant difference between program participants and non-participants regarding retention in grade. However, this study only included children through grade three. Early grade retention is rare and often directly related to the philosophy of particular teachers and administration. In the County Texas ISD no written policy exists regarding retention of young children. In Texas, no legislation exists regarding grade retention until grade 3. Since 2003, state policy requires that students be retained in grade three if they fail to pass the state assessment in reading.

Retention in grade has been related to drop out rate for Hispanic students (Lindholm-Leary, 2005). The high rate of Hispanic dropouts suggests the importance of further investigation of this variable in future studies. The loss of longitudinal data up through grade

eight affected investigation of this variable, which may have yielded more powerful results had data been available after grade three.

Research Question 3

Are there significant differences in the attendance rates, during the elementary school years, of participants and non-participants in an Even Start Program?

Research is sparse and mixed on the effect of preschool intervention on school attendance. St. Pierre et al. (1998) found that students who participated in Even Start programs demonstrated better school attendance when compared to the general school population. However Quie (2003), in studying the Even Start program in Arizona, did not find significant differences.

In this study, Even Start participants had a significantly lower number of absences at every grade level from kindergarten through grade three. Additionally, Even Start participants were more likely at every grade level to have below the median number of absences. This finding is particularly significant since in order for students to benefit from schooling, they must first be present. Students who have frequent absences experience gaps in instruction, which may lead to gaps in learning, affecting overall achievement.

Another implication of Even Start students showing significantly higher attendance is that their achievement may continue to improve as they move through elementary school, thereby increasing their chances of successful secondary schooling ending in graduating from high school. Students who attend school more often have greater access to the curriculum and often, higher achievement (Roby, 2004; Johnston, 2000; Borland & Howsen, 1998).

Students with higher achievement are less likely to drop out of school (Roby, 2004). If improved attendance is important to achievement and graduation, it appears that Even Start participants in this study are on a more positive trajectory toward increased achievement and high school graduation than non-participants.

Another positive effect of increased attendance is the effect upon school funding. Often school funding is based upon average daily attendance. In Texas, a formula based upon average daily attendance dictates the amount of state dollars individual districts receive. The implication is that the intervention (Even Start participation) produces greater revenue for the school district, making investment in Even Start an efficient use of district funds.

Even Start parents are expected to be co-learners with their young children enrolled at the Even Start Center. Parents who do not attend regularly are dropped from the program. Even Start s'emphasis on regular attendance and the importance of parent involvement before a child reaches school age could have positively affected the school attendance of Even Start students. Perhaps developing an understanding of the importance of regular attendance helped Even Start parents to be concerned about and committed to the regular attendance of their children. It is also possible that the positive community built among Even Start parents during parenting classes added to a supportive environment creating positive attitudes toward the schools and the school district.

Given the finding of this study, the school district may want to explore in greater depth the conditions responsible for greater attendance. For example, if parent experience with Even Start has a positive effect upon student attendance the district might pursue the cost effectiveness of expanding the program to a wider audience and recommend discussion with parents about the importance of attendance for all students before they reach school age.

Research Question 4

Are there significant differences in placement in special education during the elementary school years for participants and non-participants in an Even Start program?

Research to date is inconclusive regarding the influence of participation in early intervention programs on future placement rates in special education. Barnett et al. (1998) did not find significant differences in special education placement for children participating in the High Scope/Perry Preschool Program. However, Ramey et al. (1998) did find significance in the Abecedarian Project. In this study no significance was found in the rate of special education placement among participants and non-participants in the Even Start program.

Again, this study is limited in scope by only examining students up through grade three. Special education placement is rare for children prior to grade 3. Most special education placements peak at third grade and remain elevated through grades 5 and 6 (National Center for Educational Statistics, 2003). Special education placements are related to retention and current Texas policy regarding retention for tests failures after grade 3 may have affected this variable had information been available for grades four and higher. Also, whether or not young children are referred for special education testing may vary from district to district and from campus to campus depending upon teacher and administrator belief systems and district policy, which also may have affected this variable.

In the County ISD no written policy exists with regard to referral and/or placement in special education at the early grades. However, it is quite possible that an unwritten policy

exists regarding at what age an appropriate referral may be made. For example, some districts have unwritten policies that preclude referral of English language learners to special education prior to the third grade.

Research Question 5

Are there significant differences in the amount of recorded disciplinary incidents, during the elementary school years, for participants and non-participants in an Even Start program?

Research on this subject is difficult to find when examining young children; however, Berrueta-Clement, Schweinhart, Barnett, Epstein & Weikart (1984) found that participants in the High Scope/Perry Preschool Program were arrested for half as many crimes through adulthood. Substantial limitations affected the examination of this variable in this study. First, the study only included young children who are less likely to commit serious offenses requiring any kind of documentation. Second, data for this variable came from district and state databases. The state requirement for documenting serious disciplinary incidents to the Public Education Information Management System (PEIMS) has been loosely enforced leading to substantial variation in the way incidents are reported. Again, this study included data from different campuses within the County ISD. Different administrative philosophies could have affected the type and amount of data reported. Additionally, whether or not students were actually guilty of reported offenses may be open to interpretation. Although this study found no significant difference between program and no-program participants regarding reported disciplinary incidents, the findings were constrained as data were available only through grade 3. Disciplinary incidents are more likely to be handled in the

classroom by early elementary teachers and would therefore, be underreported. Had data been available up through grades six, seven and eight when documented discipline referrals are more common, differences might have been noted.

POLICY RECOMMENDATIONS

Ample evidence exists that preschool programs are effective at least initially on a wide variety of variables. This evidence suggests that those in positions of authority such as superintendents, legislators, district leaders and school board members should structure careful scientific studies to examine the outcomes of programs that are currently funded within states and districts and to expand programs that show positive results. According to Ramey and Ramey s (1998) Theoretical Model for program success, policy makers should search for programs that exhibit appropriate developmental timing, program intensity, direct provision of learning experiences, breadth and flexibility, sensitivity and environment.

The Even Start Program as it is administered in the County ISD appears to display the components of Ramey and Ramey s model with positive results. Policy makers should shift attention to early childhood interventions, rather than relying upon remediation after students have failed. Preschool programs with strong parental involvement components appear to exhibit more positive results. The positive outcome of significantly better attendance by Even Start participants up through the third grade suggests a substantial effect. As school attendance for young children is highly dependent upon parent action, could it be that the Even Start program, while maintaining breadth and flexibility, helps parents to better understand the importance of consistent attendance for their children? After all, young children do not get themselves to school. Parents must understand that for children to benefit

from instruction, they must be present. Also, the focus on building a positive rapport between home and school may have had an effect on parental confidence and positive attitude toward their children s'schooling.

It is also important to note that the children and parents included in this study were English language learners. Perhaps the mission of the Even Start program in providing English instruction to parents and opportunity for progress toward a GED empowers parents with the confidence to appropriately interact with an English dominant school. In turn, long-term positive relations with the school may be developed to the benefit of their children, for example, making efforts to improve school attendance.

Early intervention programs, such as Even Start, need consistent and ongoing program evaluation, which can inform and direct school leadership. Effective examination of any program demands accurate, consistent data collection over time. When beginning any intervention, a plan for implementation and evaluation should comprise a first step. Evaluation designs should include appropriate design, procedures for data collection and analysis. Clear time frames for implementation steps and analysis of those steps should be developed. This study was hampered by lack of planning at the onset of the Even Start program. The district kept no records regarding program participants and had no plan to evaluate program participation. When management of the program transferred from the community agency to the school district, all records were left with the agency, leaving no opportunity for the district to examine long-term program effects. In this study, only four years of participant data existed, which narrowed the scope of the study and probably affected outcomes of the variables studied.

RECOMMENDATIONS TO SCHOOL LEADERSHIP

When undertaking any new program, school leaders must also be mindful of how the program s' effects will be documented. Particularly in the current environment of No Child Left Behind (2002) schools are required to select "research based interventions." Many interventions currently undertaken by school districts are funded by state and federal funds that require performance based monitoring. If school leaders are not undertaking continuing program evaluation, promising programs may cease to be funded or may fall victim to a change in district administration. Without appropriate evaluation, ineffective programs may be continued. While summative, end of school year evaluations are critical, it is equally important to conduct formative evaluations throughout the period of intervention. Without effective formative evaluation, alteration and change of processes or procedures cannot move forward in an informed, timely and appropriate manner.

This particular study was substantially limited by lack of foresight in developing appropriate evaluation design and processes before the program was implemented. Even when the scope of the study was reduced from twelve years to four years of longitudinal data, data sets were difficult to find and were inconsistent in format across the district. Statistical tests of student achievement were hampered by small sample sizes and subjective assessment data.

In order to appropriately evaluate programs such as Even Start, school leaders must implement standardized evaluation procedures from program inception. However, if the evaluation does not utilize measures appropriate to the language needs of the students, evaluation is impaired. Assessment of English Language Learners first requires a

determination of the dominant language and then a match of instruction and assessment procedures to the dominant language. Typically the first or "home" language is the dominant language, however schools do not always provide instruction in the home language and, therefore, assessment should also be matched to the language of instruction.

In this study it was not clear that language dominance was determined and assessments matched to that language. It was reported that the language of instruction at the Even Start Center was English, which may have affected instruction when Even Start participants began school. Also, the subjective nature of assessments in grades 1 and 2 and the inconsistency of data reporting should be addressed. For example, the state provides a consistent reading evaluation instrument in the Texas Primary Reading Inventory in English and in Spanish (Tejas Lee). It is recommended that school leaders use this tool, which follows a consistent sequence of assessments from kindergarten through grade three. The lack of information regarding language of assessment and inconsistent achievement measures from grade to grade and their effects cast serious doubt upon the validity of comparisons regarding student achievement. The results of this study indicated a positive program effect upon student achievement. School leaders should structure follow-up investigations to determine if these effects continue following the third grade and to discover which aspects of the Even Start program are related to these gains. Persons responsible for administering these evaluations must be skilled and trained in order to assure that data is appropriately collected, maintained and made available to evaluators.

This study found significant positive outcomes in student attendance. District and school leaders may be encouraged to expand the Even Start program on this finding alone. Average daily attendance is very important to school funding in Texas, which makes this

finding a substantially positive outcome. Student absences are notoriously higher in the early elementary grades. The positive outcome regarding increased student attendance at every grade level from kindergarten through grade three could have a potentially compounding effect. Perhaps parents and students who understand the importance of regular school attendance at the early grades will continue those beliefs throughout their time in school. It can be generalized that the children in the Even Start program are generating more funds for the school district by being present more often than non-participants. It is also important to note here that increased school satisfaction and attendance may have a positive effect upon later drop out rate. School leaders should structure investigations to determine if attendance effects continue into later grades. Leaders should also conduct cost effectiveness studies comparing Even Start costs to later gains in attendance-generated revenue. Leaders might also investigate the relationship of attendance to parent satisfaction and support of schools.

RECOMMENDATIONS FOR FUTURE RESEARCH

This study adds to the existing knowledge that early intervention has short-term, positive effects upon students. However, very little data exists in the literature on early interventions for English Language Learners. This study marks an important investigation of these variables with English Language Learners. This research appears to be a lone example of a longitudinal study of specific program effects for participants in Even Start programs. Expanding the number of years of follow-up effects is important. Many of the critical variables such as special education placement and disciplinary action need data beyond third grade to determine long-term effects. Continuing follow up of these English language learners into later grades could be critically informative.

Apparently, the fiscal funding agency for Even Start grants requires only the submission of evaluation data based primarily upon parent participation and numbers of students served. The funding agency should commit recipients of financial support to early scientific designs that investigate critical variables. Without baseline data and appropriate comparison sampling, scientific conclusions regarding program effects are difficult or impossible.

Interventions such as Even Start may or may not be effective in every school district or for all students. It is difficult to know without consistent, objective program evaluation data and across school district comparative studies. Particularly important is the determination of whether or not early childhood interventions have sustained success for students as they advance in school. The focus of investigations must begin with strong evaluation designs, followed by specific evaluation procedures and standardized measures. These designs should include formative evaluation components in order to continually inform practice and adjust interventions as necessary. Longitudinal data regarding program participants through middle school grades would add substantially to the body of knowledge regarding long-term effects of early intervention.

In this study, the variables of special education placement and retention in grade could not be effectively evaluated for program effect because of the age of the students in the study. Young children are not referred to special education as often as older elementary children. It is important to determine if early interventions such as Even Start have an effect upon student placement in special education in the later elementary grades. Similarly, program effects on grade retention could not be effectively determined because of the age of the students in this study. Since 2003 in Texas, students must be retained in grade 3 if they

do not pass the state assessment in reading and in grade 5 if they do not pass the state assessments in reading and math. Therefore, the full impact of the Even Start program on retention may not be determined until cohort data extends beyond the third grade level. Such longitudinal studies beyond third grade should be a part of Even Start evaluation designs.

The effect of the Even Start program upon English language learning students in this study warrants further investigation. Positive outcomes regarding early achievement and attendance should be investigated further including larger sample sizes than were available in this study. It is possible that interventions such as Even Start could have a positive outcome through middle school for ELL students when these students typically experience significant drops in achievement and ðfop-out ðf school. According to the National Center for Educational Statistics (2001), the academic performance of Hispanic students continues to be below that of Anglo students with higher high school drop out rates. Solid information on the effectiveness of interventions for English language learners is critically important for many states and imperative for Texas. In this study, the lack of specific information regarding language dominance, the language of instruction of Even Start students and the language of assessment was problematic. Given that the Even Start students were English language learners and that Spanish was the first language, it appears reasonable that the measured effects upon student achievement found in this study were constrained. The limited use of native language in early development is not best practice (Thomas & Collier, 1997) and could have affected the results of this study. Therefore, investigations should be designed to measure the effects of language in Even Start programs.

In reviewing the background literature related to early intervention, many programs are designed to serve low-socioeconomic families. Many of these interventions have been

widely researched, yet none have been compared directly to Even Start programs. In south Texas, Head Start centers, Montessori programs and High/Scope programs exist. Investigations comparing these programs to Even Start could inform the profession relative to the efficiency of specific early childhood interventions.

It is clear that many children in the United States are left behind. Early interventions may very well be the key to success with such children. However, we will not know unless well designed and implemented research, which identifies critical variables of early intervention, is conducted. This study, though small in size, showed significant program effects in academic achievement and attendance. One can only suggest that further study of interventions like Even Start may prove more powerful with a wider range of data. As schools continue to be challenged with fewer resources and more diverse student needs, informed decisions about the quality and timeliness of interventions will remain of paramount importance.

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